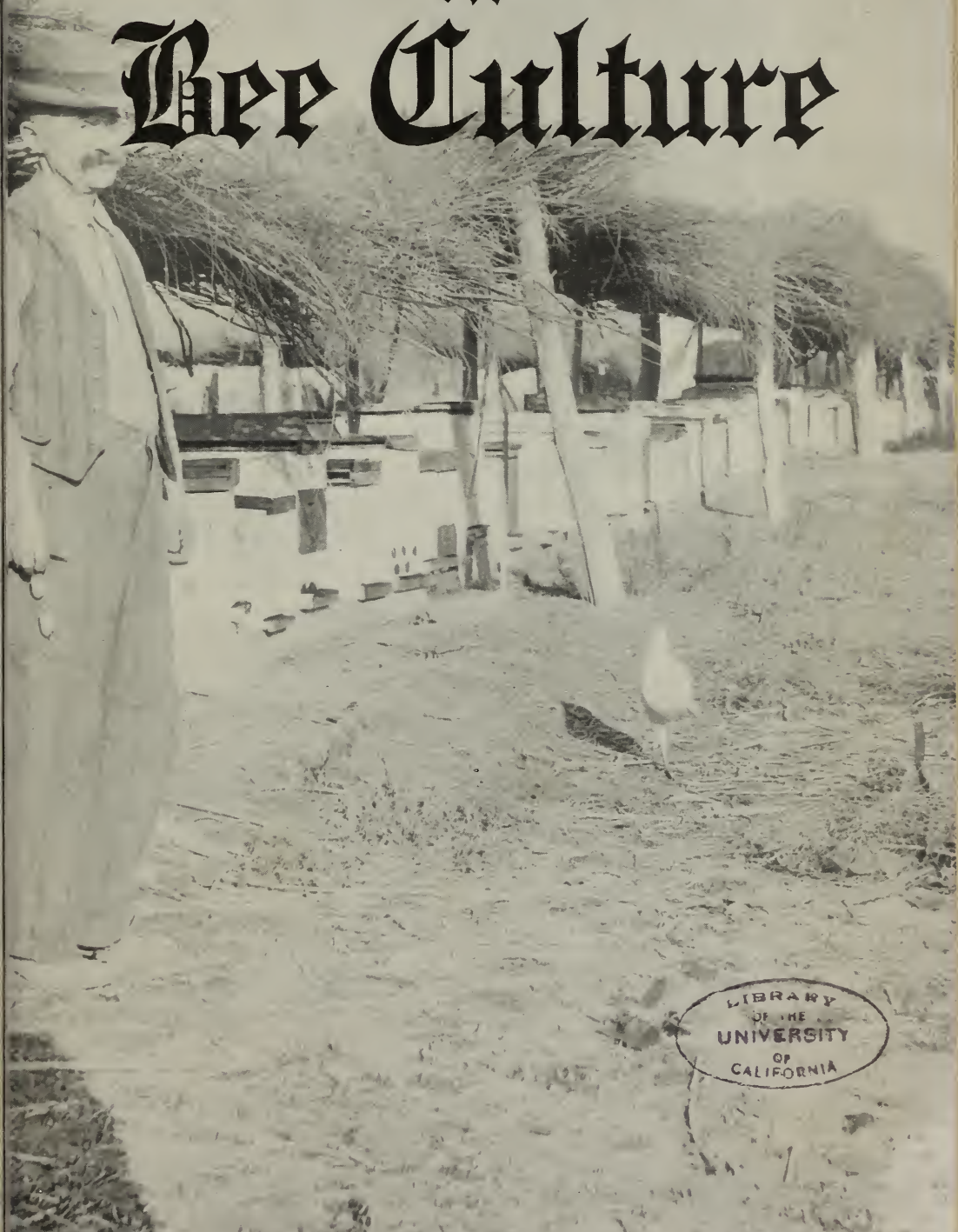


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JAN 22 1913

Cleanings in Bee Culture



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VOL. XLI. JAN. 15, 1913, NO. 2

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NO. 2

Editorial

EXTRA-YELLOW VS. LEATHERED-COLORED ITALIANS.

ELSEWHERE in this issue, Mr. Penn G. Snyder alludes to the fact that the editor, through these columns, has spoken of Golden bees as being very often cross and short-lived. We do not mean to claim that *all* extra-yellow bees are bad stingers; but we have obtained stock from all over the United States, and the most of it is either cross or dies off before spring. Many of these so-called five-banders have been bred so much for color that they are about like some of the high-class poultry that has been bred so much for feather that they are practically good for nothing. On the other hand there has been a great demand for the extra-yellow bees. They are beautiful to look at, and are sometimes the equal of any other stock of darker color. If Mr. Snyder has that kind of stock he is to be congratulated. Only recently one of the largest honey-producers in the United States, and a queen-breeder as well, told us he had eliminated all the yellow bees from his yard, adding that he was much disgusted with them on account of their being so cross, and he was going back to the old leather-colored Italians. He and his customers have had some disagreeable experience with his yellow bees, as we happen to know. Notwithstanding he says he bought stock all over the United States, they seem to be very much the same as regards bad temper and impaired vitality.

SHIPPING BEES WITHOUT COMBS, AGAIN; THE GREAT AMOUNT OF INTEREST IN THE PROPOSITION.

LITTLE did we anticipate, when we first advocated shipping bees without combs to save the cost of express charges, and to eliminate bee disease, that so much interest would be manifest on the part of our subscribers. Correspondence is coming in thick and fast from all directions, asking for more particulars—"What kind of cage would you recommend?" "How do you supply the bees with water?" "What is the best food while in transit?" "Could comb-

less bees be shipped by parcels post?" "What effect will parcels post have on express rates on bees?"

Some of these questions we have answered in part. Other questions will be answered more fully as soon as we can secure engravings to illustrate the form of cage.

In the matter of food we use for the present at least the ordinary candy, such as is used in regular queen-cages. But we are coming to the opinion that a thick syrup may be even better. The problem is, however, to provide a receptacle that will feed the syrup to the bees as fast as they require it, *without daubing*. We have tried out the atmospheric feeder using one hole. So far the experiments with the use of syrup have been on so limited a scale that they have hardly warranted us in giving a definite opinion. Water is given to the bees in the same kind of a feeder. Through the top or bottom, rather, is punched a hole about the size of a coarse pin.

Both the cans for holding the syrup or the water, or both, should be secured to the top of the cage. In order to prevent the package from being laid on its side, or being turned upside down (thus causing the feeders to leak) the top is provided with a convenient handle; and, of course, there should be displayed a label, reading "*This side up.*"

Through the body of the cage there is secured a series of thin slats arranged horizontally about $\frac{3}{4}$ inch apart and the same distance vertically. These slats taking the place of combs serve the purpose of a support for the bees during transit. Dearly bought experience years ago showed that the mere wire-cloth cage without any clustering supports to hold the bees while in transit would deliver only a small portion of them to their destination in good order. While many of them went through, the use of the slats in lieu of combs has eliminated two-thirds of the former losses while the use of the water-bottle during hot weather has served to eliminate the remaining loss not taken care of by the slats.

It is important that these cages be made light and stout—capable of standing rough usage, and to that end they should be well braced, and only a strong light *galvanized* wire cloth should be used. The latter should be further protected by a wooden grating to prevent making holes through it.

We do not know whether these cages can be sent by parcels post. We advise against it for the present, or until this method of sending bees by express has been developed a little further. The express companies will doubtless reduce their rates on bees so that they will be level with those for parcels post. As the express companies have always met postal rates before, we assume they will do it again. Furthermore, we do not know whether Uncle Sam will accept pound packages of bees in the mails. We believe, however, that the time will come when bees can be sent by parcel post. The only fear we have at present is that some beginner or ignoramus, not realizing what he is doing, may attempt to ship three or four pounds by mail in a package so frail that it will let the bees loose in transit, resulting in a ruling barring bees from the privileges of parcel post. When we have developed a package that will prove to be a perfect success for expressage, then it will be time enough to try for the new postal privilege.

The obvious advantage of sending bees without combs across the country is so great that there will doubtless be a big traffic in the near future. Arrangements are now being perfected whereby bees can be shipped from the South to make up for death losses in the North early in the spring. Due announcements will be given in our advertising columns, with statement of prices, so that the beekeeper of the North, desiring bees to let loose on empty combs where his bees have died, will know just what it will cost to make a new start.

THE IMPORTANCE OF WINDBREAKS FOR OUTDOOR WINTERED BEES.

THE reader's attention is called to an excellent article by Mr. A. J. Halter, in this issue, page 55, on the subject of windbreaks. It will bear careful reading because it strikes at one of the basic principles of successful outdoor wintering.

We are coming more and more to believe that, while double walls and packing are important for outdoor-wintered bees, suitable windbreaks, or something to break the force of a clean sweep of the wind, are equally important. We have known excellent wintering in single-walled hives that

were well sheltered by buildings and shrubbery. We have known of poor wintering in double-walled hives, subject to exposure to the prevailing winds, especially when the entrances faced those winds. Just notice how the dumb animals in the blast of an on-sweep of wind will turn their backs to the wind. The dogs of the polar regions, that will stand more cold, perhaps, than any other living things, have heavy bushy tails; and when not in motion they will stand with their backs to the wind, and the aforesaid bushy tails afforded them a protection that is invaluable. Similarly we have noticed that hives with their backs to the wind will winter better than those facing it; and invariably we find that those in the exposed portions of the apiary will suffer much more than those sheltered by shrubbery, trees, or buildings. Last winter gave us some examples of "deadly parallels." At our Clark yard were some hives upon a knoll facing a half-mile strip of free country. In the same yard were other hives located in low ground among low-spreading apple-trees and brier bushes. The last named came through in fairly good order, while the first mentioned were practically all dead by the first of March. We found the same "deadly parallel" at our other yards. At our home yard there was a bunch of colonies just in front of an opening through the evergreens facing north. These bees nearly all died, or were so weak that they might as well have been dead. Those back of the evergreens, especially in the lower portions of the apiary, wintered in very much better condition. If the reader will turn to the cover page of our Dec. 15th issue, he will see the kind of evergreen for windbreaks which we have found to be most satisfactory. They "do the business."

This winter, for the purpose of experiment, we left one apiary, the waterworks yard, on a high knoll, where it had been all summer, with a windsweep from the northwest, west, and southwest, with practically a mile of almost free country. When we located that apiary, we did not intend to leave it at that location all winter; but late in the fall we thought we would try it out for a few weeks to determine how the bees would stand this exposure of wind. They were all in our latest double-walled packed hives; but in spite of this protection we noticed in the month of December that some of the bees were beginning to dwindle, and that they were using stores faster than the bees of the other yards sheltered by windbreaks.

Our Brunswick yard was located about 9

miles to the north. It was on a sort of side hill, but so situated that it could get a strong windsweep from the south and northeast. These bees were packed in winter cases—cases that ordinarily have given us good results. But as in the waterworks apiary we found the bees were beginning to dwindle, showing that they too were suffering. It became necessary, therefore, to move both yards of bees home and put them in the cellar. This was done on sleds in the snow. How this was done will be fully explained later.

Now, then, let us take a look at the bees at the other yards, packed in precisely the same way—double-walled hives, no better nor stronger in the fall than those at the waterworks and Brunswick yards, but well protected by windbreaks of woods and shrubbery. Presto! we found an entirely different condition. One such yard is located in the midst of woods. Another apiary, next to our factory, is surrounded by tall evergreens shown on the front cover of our Dec. 15th issue. Another yard, the Harrington, is located in an orchard with low shrubbery and apple trees on the north; a piece of woods on the west, apple trees and shrubbery on the south. All the apiaries had an equal and a fair chance. All were well fed up for winter, and all were equally well housed. As already reported, the two yards that we left out in the open, subject to windsweeps, were losing bees and stores; those that were sheltered from the wind were in excellent condition.

We have never had any difficulty in wintering bees outdoors when placed in double-walled hives properly protected with windbreaks, except in extraordinarily cold weather such as we had a year ago; and as these very cold winters come only once in about thirty or forty years it is hardly worth while to take them into serious account; and when they do come, the bees should all be put indoors in the cellar.

If the reader of these lines discovers that his bees are exposed he can very easily move them, if cold weather has set in in his locality, to a more sheltered location. We recently moved a yard of 90 colonies about 1000 feet to the west on a sled. On the north and west is a big mass of woods. On the east side of it is a grove of basswoods. On the south is a slight knoll and some low shrubbery. The most perfect windbreak that we know of is an open spot inside of a piece of woods. A mass of undergrowth consisting of brier bushes and low-spreading trees we would place next, providing they surround the apiary, or at least are on the sides from which the prevailing

winds come. Farm and out buildings make an excellent protection.

We have come to attach less importance to a high board fence on the north and west than we formerly did. The trouble is, the wind strikes it, glances upward, when it is struck by the on-impelling blast overhead, and then glances downward. At our basswood apiary from which we have just removed 90 colonies to a more sheltered location, we found there was one row of hives where the bees would die more than anywhere else in the apiary. The drifting snow shows how the wind would strike those hives and then rebound, apparently, and skip the other rows, which would winter better.

The objection might be raised that bees, if put in an inclosure of woods, will wear out their wings in flying through the brush or trees. To a certain extent this is true; but the most of them will ascend almost vertically until they reach a height sufficient to clear the obstruction. In doing this they clear all domestic animals in the fields near by, thus avoiding trouble with neighbors. When an apiary is located near a line fence next to an open field the bees are apt to fly in such droves that they are liable to attack the farmer and his horses in plowing, cultivating, or in haying and harvesting. We have, therefore, come to the conclusion that all apiaries should be located, as far as practicable, remote from a line fence, and so inclosed that the bees will have to fly high, where they will not bump up against live stock in great droves. When they descend they will be so scattered that they will prove to be no menace to either man or beast.

We shall be glad to hear from some of our subscribers and correspondents, because we believe that a thorough discussion of this matter of windbreaks will show their very great importance. While they have little or nothing to do with bees wintered in cellars, we should remember that probably only about a tenth of the bees in the country are housed indoors during winter.

We are also pretty well convinced that this matter of windbreaks is of supreme importance to beekeepers located in the southern States. If there is a place where one suffers from cold it is in a semi-tropical climate during winter. The atmosphere is chilly and damp—so disagreeably cold that it seems to go clear through one's anatomy. We are convinced that damp chilly weather is about as destructive to bee life in the South as the cold dry weather in the North. In fact, for our own comfort we would prefer the latter.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

CHARLES S. SHARP, feeding dry cube sugar, p. 30, is a fine thing in some cases, *with the proper moisture*; but I'm afraid the beginner can not count on that moisture in all cases without supplying it.

P. C. CHADWICK, I don't know about your locality. May be, as you say, p. 5, it takes a lot of bees to defend large entrances, but here, in the height of storing, I've some doubt whether any bees lose time merely as guards. At any rate, I believe a larger force is needed for ventilation with a small entrance than for defense with a large entrance.

A. I. ROOT, you say, p. 36, "Is it not true that some of our experts *always* get a crop of honey more or less?" While an expert might get a crop where a bungler would fail, it might be nearer the mark to say there are *localities* where there is always a crop. If there is no honey in the flowers there will be no crop, expert or no expert, and there might be a locality always so good that even a bungler could never fail.

MORLEY PETTIT, referring to a Straw, p. 754, in which I say, "European would have to be pretty bad if you couldn't find two healthy combs in every diseased colony, at least that is the case in this locality," replies, "In the locality of Ontario you would have to put the word American instead of European in that sentence. When we find European foul brood in one or two colonies of an apiary, we can rest assured that we do not need to go any further, for it is practically certain to be in every colony in the apiary, and in every brood-comb. I suppose the fact that it is found mostly in apiaries of black bees makes it so much worse with us." Thanks for that much more light, Bro. Pettit, even though the darkness be yet somewhat profound. [This is a surprising statement concerning European foul brood. We have never had any experience with it, we are glad to say. We should like to inquire whether others have had the same experience.—Ed.]

"We have not yet seen the cellar where the ventilation was as good as outdoors," p. 790. Strictly speaking, no. Yet if you'll go down cellar with me, Mr. Editor, I think you'll agree that the difference is not recognizable. At this present moment, with 37 degrees outdoors and 53 degrees in cellar, the door is wide open. When cold enough to close or partly close it so as to keep up to 45 degrees, the difference outside and in

makes a rapid change of air so that it is always pure. [Those who recommend outdoor sleeping-porches for the treatment of tuberculosis claim that there is a big difference between porches and a ventilated room inside of the house. If there is any thing in this, the quality of the air outdoors is very much purer and better than that inside of a building that receives its air through a door. Relatively, however, the difference may not be so great. But there is one thing sure, doctor, we do not believe you would run the risk of dropping your cellar temperature to, say, the freezing-point, 32 Fahrenheit, within your cellar; and yet it is conceded that outdoor bees will stand the freezing-point very nicely, and come out in fine condition the following spring. They will stand all grades of temperature, providing it does not go below ten above and continue there too long.—Ed.]

Not often are two such interesting articles brought out as in the friendly Lovell-Ryan controversy, pages 654 and 771. As a beekeeper of the rank and file, I should incline to the opinion that bees may be attracted by the odor of honey where color can play no possible part, and also that color plays even a more important part than odor when it comes to bees and flowers. But more interesting to me than this is the Crane-Ryan item. Mr. Ryan says, "It seems rather out of the way to speak of the Man-God as learning any thing from the hills and valleys, flowers, etc. If I mistake not, he was invested with all human science, and had naught to learn from his own creatures." Surely reason would point in that direction. Of him it is said, "All things were made by him; and without him was not any thing made that was made." And is it reasonable to believe that he would learn from the objects of his creation? Plainly Bro. Crane is following something else than reason. And I must confess sympathy with his view. I like to think of the Savior of men as very God in the highest and fullest sense of the word, and yet at the same time, in some mysterious way that I do not pretend to understand, as being a man just as much as I am a man, who had to learn things just as I have had to learn them. Moreover, if Bro. Crane has no reason for his comforting belief, he has something higher than human reason; he has the word of God, which says, "And Jesus increased in wisdom."—LUKE 2:52.

SIFTINGS

J. E. CRANE, Middlebury, Vt.

In the discussion of cases and carriers, p. 683, Nov. 1, there is this to be said: That honey needs much more careful packing to go safely in cool or cold weather than when the temperature is up to about 70 degrees.

* * *

The bulletin recently issued by the Department of Agriculture on the management of bees for the prevention of swarming and securing surplus comb honey is, I believe, one of the best things we have along this line. Every beekeeper should secure a copy.

* * *

Mr. Doolittle's advice, p. 687, Nov. 1, about selling the year's honey crop, is certainly orthodox, and all right for the beekeeper without much experience; but the season is longer than formerly, and we have calls now for comb honey from July till March.

* * *

The reason why that swarm hung on a limb all the fall without building any comb, p. 743, Nov. 15, is not at all strange. It was, doubtless, because no honey was coming in. Bees swarm in some parts of Florida before the flowers yield honey, and I found last spring that it was impossible to get new swarms even to draw out foundation unless the bees were fed.

* * *

Mr. Doolittle's advice, page 723, is all right for hives with sealed covers; but where there are absorbent cushions that will allow the moisture to escape above, it seems to me quite too much ventilation to give. If we ventilated our sitting-room as much in proportion to its size it would make an opening across one end and four feet high, or about 65 square feet.

* * *

That editorial, page 717, Nov. 15, on the difference between the flavor of comb and extracted honey, is right to the point, and covers very fully the ground of putting up extracted honey. I can only add that every time honey is liquefied it seems to lose more and more of its original flavor, until, if repeated many times, it becomes only a soggy mass of sweetness.

* * *

The parcels post seems likely to prove a blessing to beekeepers as well as to the rest of mankind. This reminds me that I recently received by mail a section of comb honey from Paul Hunten, of Somerset, Col-

orado, without any breakage or leakage. The section was as handsome as the honey it held, and was simply enclosed in a corrugated paper carton; but the section was a special kind as described on page 732, Nov. 15, and well adapted to being shipped in this way.

* * *

Mr. Byer's experience with black Italian bees in a new yard is of general interest. I used to think that a black colony was hardly worth wintering; but of late years I find I can get almost as much surplus from blacks as from Italians, and I sometimes wonder whether the blacks have improved or whether the Italians have degenerated. I think more difference will be seen between the two kinds in a poor season than in a good one, and this may account for the great difference experienced by Mr. Byer.

* * *

The house apiary shown on the cover page for Nov. 1 certainly looks well. I have run across two or three in inspecting. There are some points in their favor, such as the lessened danger of stings and a chance to work in all kinds of weather. But on the other hand, the inconvenience and loss of light more than balance the advantages, to say nothing of the greater expense and loss of queens.

* * *

Major Shallard, p. 701, Nov. 1, gives some facts about bee paralysis that interested me greatly. I had the care of some bees last March where the disease existed, and I studied it from day to day. My first impressions were that the disease is caused by some kind of poison, and I found it hard to think otherwise. But why should but two or three colonies in a yard be diseased? I have found in two or three instances that a single colony of bees would gather honey in quite a different manner from any other in the same yard. These bees would either go further or would work on sources that other colonies would reject. Major Shallard's statements that some localities were much more subject to the disease than others would seem to confirm the idea of poison. Poison, I learned, was being used in the vicinity of the colonies which I just mentioned. The poison, I also learned, was often mixed with honey when used. Very much more study of the subject, however, will be necessary before I can assert positively or with much certainty that I am right.

Beekeeping in California

P. C. CHADWICK, Redlands, Cal.

REPORT OF 23D ANNUAL CONVENTION.

The 23d annual convention of the California State Beekeepers' Association was held on Dec. 12, 13, 14, at the Y. M. C. A. building, Los Angeles. It would be impossible to give a report of the three days' session in detail. I will, therefore, mention briefly some of the most important points. Nearly all of the great honey-producing counties were represented. Many new faces were seen. Men from north and south worked side by side for results. No one man won more esteem than Willis Lynch, of Newman. C. Hauser, of Sacramento, and J. G. Gilstrap, of Ceres, were also strong factors in the convention. All were new to the annual assembly.

In many respects it was the most successful meeting ever held by this organization, the most pleasing features being that harmony prevailed, and that advancements were made on foul-brood legislation, so long hoped for. The bill is now ready to present to the State legislature, and has the solid support of the entire beekeeping fraternity. It is to be hoped we may be able to convince our representatives at Sacramento that they should pass it in the interest of this important branch of agriculture, for I think it is without doubt the most complete bill of its kind ever drafted for the protection of the beekeeping industry.

Mr. J. D. Bixby's remarks on black brood were eagerly listened to, for there is no question at the present time that is agitating the minds of the beekeepers of California so much as that of eradicating black brood or being able to combat it.

Mr. J. E. Plesants, of Orange County, had a very interesting paper entitled "Ridding a County of Foul Brood." This venerable gentleman told how he had in ten years reduced American foul brood from 15 per cent to $\frac{1}{2}$ of one per cent, which is a record well worth being proud of.

The paper of Mr. A. F. Wagner, of Imperial County, entitled "County Ordinances and their Value," created much discussion, and showed plainly the opposition to drastic county ordinances, but doubtless helped to crystallize opinions favorable to our proposed State law.

Prof. A. B. Ulrey, of the University of Southern California, spoke on "The Principles of Breeding."

Prof. Ralph Benton, of the same institution, spoke on "The Varieties of Bees as Nature Left Them," which was largely geographical in nature, describing the lo-

cation of different races and the surroundings that limited their natural distribution.

Then came two fine papers on queen-rearing, by Mr. Henry Perkins, of Artesia, and Mr. Geo. J. Brown, of Tusten. Both are young men, and have a great future in prospect.

At the evening session Dr. C. A. Jenks gave a very interesting demonstrative lecture on "First Aid to the Injured." While this was not on a subject in connection with the bee industry, yet it was valuable for its instructions as to what to do in case of emergencies. The most valuable part to the beekeeper was that relative to snake-bites, for there are few apiaries that do not have the rattlesnake as a visitor.

Willis Lynch, who has traveled around the world observing the different races of bees, told of bees as he found them in Hawaii, the Philippines, Borneo, India, Egypt, Italy, France, Germany, and England. His description of the large bee of the Philippines, as well as the smaller, was especially interesting, as well as how the natives of Borneo feast on the unhatched brood, preferring it to the honey.

Mr. C. Hauser's remarks on organization were timely and to the point, and deserve a place on the records of our association.

Of Mr. J. G. Gilstrap, I can say nothing better than that he came to work, and helped accomplish many of the advancements of the convention.

Mr. J. B. Neff, who conducted our beekeepers' institutes so successfully during the past summer, spoke on co-operation. Mr. Neff is in the Walnut Growers' Association, and knows the value of co-operation.

The association passed a resolution inviting the National to come to California in 1915. This developed a scramble between San Diego and San Francisco for a place of meeting, which was finally disposed of by leaving the decision to the National.

Riverside County presented a resolution adopted by that county's club relative to protecting the bee-ranges from brush fires. They have asked their county supervisors to appropriate a fund for fighting such fires, and to prosecute persons who carelessly start fires. I was especially glad that this action was taken, for I know of nothing that is more detrimental to the beekeepers of the sage-range country than to have their honey source destroyed.

Suitable resolutions were adopted in

Continued on page 47.

Beekeeping in the Southwest

LOUIS SCHOLL, New Braunfels, Texas.

THE SCHOLL IMPROVED HIVE-NUMBERS.

The accompanying illustrations will give a very good idea of the hive-numbers of my own design which I have used for a number of years. Though everlasting they are easy to make for any style of hive in use, quickly interchangeable from one part of a hive to another, or from hive to hive. No nails, staples, nor any thing of the kind are necessary to hold them in place; and in this way they overcome the greatest objection to practically all the hive-numbers so far invented. This advantage is especially

from one to another in case the hives are interchanged or changed end for end. They are easily made by simply cutting pieces of galvanized iron $2\frac{1}{2}$ x 3 inches, snipping off the two upper corners, as indicated, and then bending over the ends to hang over the upper edges of the hives. They are easily bent or folded over in any common bench-vise. By means of a small piece of hard wood the exact width of the upper edge of the hive in use, clamped in the vise, a gauge for each number-tag is obtained that insures all being folded alike.

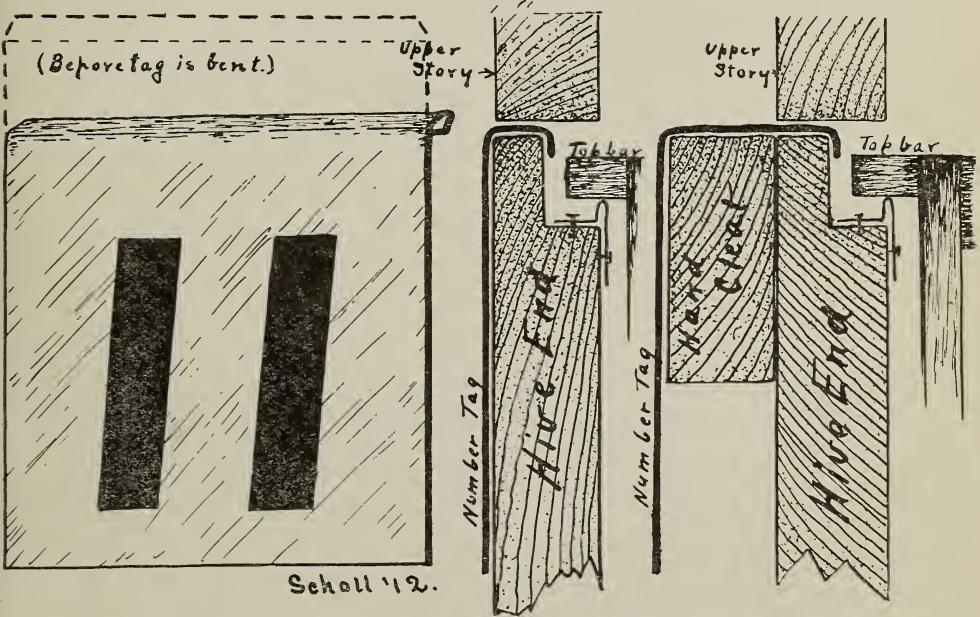


FIG. 1.—Scholl improved hive-numbers, showing how the galvanized iron is folded and adapted to various styles of hives.

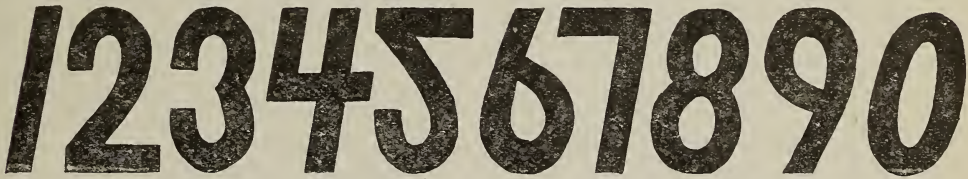


FIG. 2.—Numbers for the rubber stamps; simple, plain, and bold, hence easily read.

marked when hives are composed of many shallow stories, as with our divisible-brood-chamber hives. Then, too, in the old system of numbering it is a nuisance and expense to keep nails, staples, or hooks in proper repair, on each end of every deep hive-body or shallow story. I say on each end of every hive or story, because it becomes necessary to change the numbers

They are easily numbered by using a set of only nine numbers, as shown in Fig. 2. It will be observed that only one stamp is necessary for the 6 and 9, as the former can be reversed to print the latter. A simple home-made cotton pad can be supplied, covering the cotton batting with a piece of thin domestic. I used good solid black coach paint, and find that it lasts admirably. Of

Continued on page 59.

Conversations with Doolittle

At Borodino, New York.

FEEDING BACK FOR COMB HONEY PRODUCTION.

As the price of comb honey is much more per pound than that of extracted, I have been wondering whether I could not extract my honey next summer as I have usually done, and then, instead of selling it, feed it back to the bees and have them put it in sections. What do you think of this?

Feeding back extracted honey for the purpose of producing comb honey is something which has been often tried and frequently written about; but so many conditions enter into the problem that many of our most skillful apiarists have very nearly if not quite failed of success. From my own experience, and from what I have been able to learn from others, the character of the bees that are used is among the first in importance. If my experience proves any thing it is this: No financial success can be obtained with bees which are prone to store their honey close up to the brood in the brood-nest. Any variety of bees whose disposition is to cling to the brood-chamber, to crowd it with honey, and, when that affords no more room, to cease labor rather than to overcome the disinclination to pass beyond the limits of the brood-nest into a surplus apartment above, can not be successfully used in this plan of feeding back. In fact, such bees are hardly profitable for section honey, even though they may prove the very best to the one whose apiary is run for extracted honey. In selecting bees to be used for feeding back, no point is more important than that those should be chosen which are willing to enter and work in supers or sections quite distantly removed from the brood. The dark or leather-colored Italians, which prove to be the very best for extracted honey, are very defective in this respect, and they also give their cappings a dark greasy appearance by their plastering the scanty amount of wax used right down upon the honey. These bees can not be profitably used for section honey, to say nothing about comb honey produced from honey fed back. Carniolans, golden Italians, the German race, or crosses, in which black brood predominates, are superior for your purpose; though even among these, judicious selections may be made to a great advantage.

Then nearly if not of equal value with the character of the bees comes the character of the queen. The point to be looked after here is that the queen should be of such a make-up that she will have her hive well supplied with brood at the end of the honey-flow, when we wish to begin feeding

back the honey we have extracted during the flow. It is not so necessary that she continue her prolificness after the feeding has begun, more than enough to keep the colony in good condition for winter; but unless she has a hive pretty well filled with brood in all stages, when the feeding should commence, the colony will not have the numerical strength desirable, and there will not be enough brood in the combs to furnish the required reinforcements, as the work progresses and the old bees perish, in which case the finishing-up of the matter will result in failure, no matter how "rosy" the outlook at the start.

Next in importance comes the time for the white-honey flow in your locality. If the flow continues till late in the season, it is little use to try feeding back at all. If we can commence feeding comparatively early in the season we shall avoid, as far as possible, the disposition of the bees to store honey in the brood-chamber—a disposition which, with all varieties of bees, increases as the season wanes. Then we secure the great advantage of having the work done during the hottest weather, at which time bees produce wax and build comb with more economy than is possible after the nights become longer and colder. If we attempt feeding back before the harvest of white honey closes we shall lose all the bees would store without making a proportionate gain. In this locality the opportune time is immediately at the close of the basswood flow, about July 12 to 16, in the interim between this and the yield from buckwheat, which commences about August 15 to 20.

Lastly, we have the size of the brood-chamber. This, of necessity, should be small, otherwise room is given for the storage of a large amount of the honey fed, in which case this honey is of less value than was the case before we commenced operations. Then with a large amount of comb an opportunity is furnished for the production of an immense amount of brood whose value beyond a certain limit can not be great, and such brood means the consumption of a very large amount of the honey fed. I have had better success with a brood-chamber of about the capacity of five Langstroth frames than with one either larger or smaller; and by selecting such well filled with brood, the larger part of which is in the egg and larval form, a seeming advantage is gained.

Continued on page 59.

General Correspondence

THE IMPORTANCE OF KNOWING YOUR LOCATION

How the Absence of Pollen in the Breeding Season in the Spring May Ruin a Whole Apiary

BY A. B. MARCHANT

For the past fifteen years I have been keeping bees for profit. I have kept from 500 to 1000 colonies in three yards, running mainly for extracted honey, having shipped as much as 50 tons in one season. I have always reared my own queens, and the past two seasons I have gone into commercial queen-rearing, which has led to the discovery I am now writing about.

Last March The A. I. Root Company contracted with me for a carload of three-frame nuclei and a carload of ten-frame-hive colonies of bees. I knew this was a big undertaking; but as the bees were not to be shipped until I had gathered the season's crop it seemed to me there would be a good profit in it. I accordingly made preparations to ship them; but before I made either shipment I had young laying queens ready to take the place of those that were shipped with the order. The hives from which I shipped those bees were left with about a three-frame nucleus. I immediately gave each a laying queen and began feeding to start brood-rearing. I then left the bees with my helper, and was gone for over a month, expecting to come back and find them in fine order, when, to my surprise, I found about one hundred dead and swarmed out. Upon investigation I found that the bees were destroying the eggs as fast as the queens could lay them.

I saw at once that something would have to be done immediately. I examined all apiaries near me, and found the bees weak, and queens not laying, on account of no pollen coming in. I have always known that my locality is short on pollen after the honey flow is over; but I had no idea it was as bad as this. So I decided the only chance for me was to buy bees and strengthen what I had left. So I began to look out for bees. Many times I have heard the beekeepers 15 miles south of me say they had swarms in February and March, and plenty of brood up till November; so I at once called on some of these men, and examined their apiaries. I found their bees in fine condition. I purchased one yard with 65 colonies and borrowed 50 from another beekeeper, and began to give out the brood to my weak ones. I had been in the business for fifteen years, and for the last ten years

I well knew that pollen was my difficulty in getting my bees strong in time for the honey-flow. I also knew that the beekeepers south of me built their bees up earlier than I did; but on account of my location being better for honey than those south of me I paid no attention to them.

After all these years I have found what I have needed in my own locality, and a way to get it. I am now moving my bees to these locations, and will keep them there until the first of April, when the tupelo bloom is open, then move to my present location and stay till June 1, then move back and stay till next April. In this way I can get a crop of tupelo honey, build my bees up for winter, and at the same time have an ideal place for queen-rearing and the shipping of bees by the pound, and nuclei of any size. This location I purchased with the 65 colonies. The owner tells me that he has drones flying in February and sometimes has swarms during the same month.

This place is located on an island; and, with the exception of one small apiary, it is five miles from any other bees; so it is a fine place for queen-rearing and pure mating of bees.

Sometimes it pays one to get into trouble. In this case I believe it will pay me. It goes to show it pays one to study his location and find out where the trouble is, and then try to overcome it.

Sumatra, Fla.

A NEW CURE FOR BEE PARALYSIS

A Disease Resembling Bee Paralysis Relieved by Feeding Syrup Containing a Physic

BY W. A. BARSTOW

Some may laugh at the strange treatment that I gave my bees when they were sick, but nevertheless my plan was a success. The bees in one of my colonies were dying in large numbers, their abdomens being unusually large; and when I picked them up in my hands a slight pressure would cause them to excrete a large amount of yellow liquid, which, when dry, looked like pollen. The bees trembled as though in distress, and it occurred to me that the intestines might be clogged.

My theory is this: When plenty of honey is coming in, the bees may show no sign of sickness; but later in the summer or fall the bees may get some honey containing pollen that might be poisonous, or that has soured, or grown moldy to a certain extent; so that, when they feed on it, it is in the

right condition to cause what might be called constipation. At any rate, if there is no relief the bees die in great agony. In this condition they crawl out of the hive with their wings stretched out or lying close to the floor, and they roll over and tremble, and at times seem to lose control of themselves. They have a greasy appearance, and their abdomens seem to be so distended that the different segments hardly meet. They go to the edge of the alighting-board, and fall to the ground in great numbers and die.

I am not a doctor nor a medicine man, nor even an expert beekeeper; but I decided to try a remedy that occurred to me. I made a syrup of equal parts of sugar and water, and then mixed with it about a fourth of a teaspoonful of *herbine*, a medicine which we get here at the drugstore. I poured some of this syrup into an empty comb and set it at one side of the hive, and the bees quickly emptied the cells. The next day the hive was fairly covered with brown spots, and one would almost need an umbrella in the apiary, for the medicine took quick action. I suppose almost any kind of strong physic would answer, but the *herbine* is all that I happened to be able to get.

Later on, the bees in this colony were sick again, and I tried feeding syrup alone, but it had no effect. Then I added the medicine, and it worked as well as before.

Two more colonies were diseased, and I gave the bees the same treatment and with the same result.

My colonies are all right now; but if I have any trouble I intend to shake the bees on empty combs and give them a new supply of medicated syrup to take the place of any bad stores they might have had.

San Jose, Cal.

[This looks like a case of bee paralysis. If so it might not disappear of itself without treatment. Was the medicine responsible for the cure of the trouble mentioned? We should be glad to have others try it and report.—Ed.]

THE ADULTERATION OF HONEY, AND WHAT IT MEANS TO THE BEEKEEPER AND DEALER

BY HENRY REDDERT

Up to a decade ago, before our national Government enacted the pure-food laws now in force, widely distributed eatables of all kinds, including honey, were found adulterated to some degree. It was said at one

time that 40 per cent of the honey sold in Ohio alone was mixed with ingredients foreign to its own kind. We know of cases where small dealers, eager to make the most money out of a given quantity, mixed it with sugar syrup the moment the farmer selling it left their store. But the practice has been abandoned, so far as we know, simply because they fear the sting of prosecution.

Large dealers, as a rule, were honest. If not, their business lasted but a short time. It was the small consumer who suffered most, the large buyers having skilled inspectors at their warehouses—a fact known by the sellers. I remember when honey that was purchased from any one excepting the beekeeper was considered impure, even if the dealer guaranteed it. Even up to the present day this supposition is still found, but mostly among people who know very little about honey. Recently a lady said to me, "I buy your honey because you have bees." I told her that I knew dealers in the city who also had pure honey, but she still insisted that the beekeeper's honey was better.

Frequently we read an article in the daily newspapers about artificial comb honey, colored and mixed strained honey, sugar syrup, etc. All have their share of condemnation. One year my son sold the larger part of my crop to druggists in one city. The honey was very light. He had solicited their orders by a small sample in a clear white-glass bottle. One refused to take the gallon he had ordered, saying it was colored, because the density of the honey in the tin bucket didn't admit the clear and light color of the sample. Of course, he should have known better. This case shows that even men of science are baffled as to the purity of honey.

A beekeeping friend relates this incident: A grocery and daily-market owner bought a quantity of his honey for his own table, saying, "When I buy your honey I know it's pure." My friend replied, "What's the matter with the honey you sell?" He answered in broken English, "Dey always put a little in."

Why is the consuming public so doubtful? Simply this—even now we have beekeepers and honey-dealers who believe they have found a recipe to improve the color and taste of their product. Every purveyor of honey should bear in mind that the education of the general public in the elaborate use of honey instead of other syrups depends largely on the purity of the article. By all means, don't mix. Every now and then the newspapers cite cases where this or that firm or person has been fined for

violation of the pure-food act. Let us conduct our business in such a manner that every consumer will be thoroughly convinced the honey he eats is pure, whether purchased from a dealer or beekeeper. In the long run, honesty is always the best policy. Cincinnati, O., Dec. 8.

BEEKEEPING IN CALIFORNIA

BY P. C. CHADWICK

Continued from page 42.

memory of prominent beekeepers and members of the association whom death has claimed during the past year.

Mr. W. H. Allen, of Ventura, asked that the report that Mr. Corey brought the first bees to California be corrected, as Mr. Corey never claimed that honor. Mr. Harbison shipped the first bees to the State that we have record of, but said he found others here when he arrived. Mr. K. M. Henneken, of Monterey, said that the Spanish fathers had a record of bees having been brought here some time during 1700.

The annual election of officers resulted in President Farrer and Secretary Shaffner being re-elected to their respective offices. J. G. Gilstrap, of Ceres, succeeds Ralph Benton on the executive committee.

Action was taken looking to the establishment of a bee journal for the association.

* * *

NOTES FROM THE CONVENTION.

J. D. Bixby condemned old combs as being detrimental to beekeepers when fighting black brood. This position was also taken by W. G. Hoore.

* * *

Owing to sickness, Geo. L. Emerson was not seen after the first day's session. Mr. Emerson is one of our old war horses, and that he was missed goes without saying.

* * *

Mr. C. Hauser, of Sacramento, had some honey from carpet grass (*Lippia nodiflora*) at the convention. It is a beautiful white in color, and has about the mildest flavor of any I have ever tasted.

* * *

Mr. K. M. Henneken, of Monterey County, told of a colony of bees that produced honey to the value of \$38.00 in a single season. This gentleman was inviting beekeepers to come to his county with bees to help save the wasting nectar. It really seemed strange to have a man asking beekeepers to come with him instead of sending them word that there was a foul-brood fence up to keep them from sending bees in from

any locality within twenty-five miles of some other place.

* * *

Spraying black-brood combs with strong brine and allowing the salt to crust thereon until ready to use to protect from moth and kill disease germs was a plan spoken of by Mr. Bixby. Although he lays no claim to having originated the idea, it is said to work successfully. The combs are dipped into the water in order to remove the salt before being used again.

* * *

A word of praise to the deserving is never amiss, so I say that, when President J. W. Farrer and Secretary A. B. Shaffner were unanimously re-elected to their respective offices, their efforts of the past year were recognized.

Sec. Shaffner during the past year has written more than 600 letters, and has addressed thousands of reports and bulletins, for which he would not even accept the meager \$25.00 which was his by virtue of his office.

* * *

Colorado claims to have 27,000 colonies of bees. Los Angeles County, Cal., is said to have 60,000; Imperial County, 12,000, and from the best information at hand I feel safe in saying that there are 250,000 colonies south of the Te hatchapi. No wonder beekeepers complain of being a little crowded in places. I have no figures on the number in the San Joaquin and Sacramento valleys or the upper coast country; but that California has "some bees" is a foregone conclusion, and there are thousands of colonies in the State that never figured in the last census.

* * *

As a matter of information to the California beekeepers I wish to say that our exhibit at both the San Diego and San Francisco fairs in 1915 will be under the supervision of Mr. M. H. Mendleson, of Ventura. The writer will be Mr. Mendleson's secretary, with H. J. Warr, of Perris, in close touch. I wish I could impress upon the California beekeepers the necessity of beginning now for this exhibit. We have an opportunity before us to astound the world with the grandest exhibit of our products ever seen. We must have money, honey, and nice wax in just as liberal quantities as we can afford. We want as many kinds as California produces of as near pure honey of its kind as can be secured. Brother beekeepers, this will doubtless be the last time in the lifetime of at least the older of us to see our industry crowned

with an exhibit that will show to the world that we are able to grasp an opportunity presented at our door. Every beekeeper in California could set aside at least one case of honey or the proceeds from a case to help with the exhibit. We also must have the finest of comb honey in liberal quantities. Begin your plans now for helping to make it a grand success, for it will be a monument not only to our industry but to the State as well.

* * *

During convention time I busied myself talking with members regarding the flora of various parts of the State, and the quality of honey produced from different flowers. I was especially anxious to learn, if possible, whether alfalfa produced different colors of honey in different regions, or whether the difference in color is due to the mixing of darker grades with the alfalfa. I have always doubted the claim of some that it produced different colors in different soils. The opinions of those I questioned were about evenly divided, but several to whom I spoke were emphatic in saying that it is other darker grades mixed in the alfalfa that give it the darker color, so until I have stronger evidence on the question I will remain of the opinion that it is no more inclined to do so than is the button sage, the orange, carpet grass, or any other of our forage plants.

A NEW PLAN FOR REQUEENING

Allowing Queenless Bees from a Strong Colony to Unite Slowly with a Nucleus Containing the Young Queen

BY A. V. SMALL

It is often desirable to requeen a good many colonies late in August or early in September—first, because the apiarist has more time to give to queen-rearing at that season; and, second, because the August-reared queens usually prove vigorous layers the following year. But at such a time as this, when the best of the smartweed is gone, and there is a hint of fall in the air, the bees sometimes refuse to accept a queen introduced by the ordinary cage plan; also some colonies are very irritable when the late honey-flow tapers off; and to hunt for queens when bees are cross is a disagreeable job.

The following plan is original with me; and while I have used it only one season the results have been very satisfactory: My queens are mated in nuclei of from two to five full-depth frames. After the young

queen has begun to lay, and some of the larvæ have hatched, I lift out one or more of the frames with brood, adhering bees, and the queen, and place them in a hive-body on the stand of the hive I want to requeen, putting over it a screen with a spool plugged with queen-cage candy tacked to the under side of the center of the screen, where there is a hole the same size as the hole in the spool. On this I put an empty brood-chamber with a feeder of thin syrup. This I cover with a bee-escape board, and finally I set on the full colony that is to be requeened. This is done in the evening after the bees have stopped flying.

The next morning, when the bees of the full colony pass down through the bee-escape, they find themselves with a feeder of thin syrup in the empty hive-body, separated from the full colony and old queen by the escape-board above, and from the nucleus below, containing the brood and young laying queen, by the screen wire with the candy spool. In this queenless, broodless, combless condition they realize that there is something wrong. They have lost their old home and their old queen. By the time they have eaten their way through the candy spool they are fairly crying for a new queen, and are more than willing to unite with the nucleus. The strong point in this plan is that the bees are made to feel the desire for and the need of a queen; also notice that this large force of bees from the old colony is composed of the strangers, and that the little nucleus force is at home in the sense of possession.

In a day or two the old colony on top will have only a few bees, and the old queen can be found easily, and removed, after which the combs and what bees are on them may be put in the lower hive, the two empty hive-bodies removed, and the work is done. One colony that was requeened by this plan had been queenless for nearly three weeks. No fertile workers, however, had appeared. I should like very much to try this on a colony that did have laying workers.

At a time when there is no honey to gather, and the bees are loafing instead of going to the field, they are slow to pass through the escape. At such times they can usually be induced to pass the bee-escape, in an attempt to go to the field, by placing a small feeder of thin syrup in an empty super above the full colony.

From my experience last fall, this plan will work up to the time it is too cold for the bees to pass readily through the bee-escape.

North Topeka, Kans.



FIG. 1.—Robert Stites, of Colorado, preparing his winter cases.

SOME BEEKEEPERS OF COLORADO

BY WESLEY FOSTER

Mr. Robert Stites is one of our newer beekeepers in Colorado; but he is going at the business right, and we expect him to make a success of it, as he already has in the arrangement of a very neat apiary. He lives but one or two miles from Montrose, and his apiary overlooks the Uncompahgre Valley, giving a beautiful view of this rich agricultural and fruit section. We found Mr. Stites at work upon his winter cases, one of which is shown over the first hive in Fig. 1. He lost most of his bees the winter of 1911, and he does not expect to have another like experience if preparation will avoid it. The space between the hive and the outer case he will pack with leaves, chaff, etc. This winter he has packed them

with dried horse manure. An empty super filled with chaff goes on top, and an outside strip goes around the super to cover up the space at the top of the winter case. The bottom-boards are made several inches larger than the hive, so that the winter case will just fit. I do not know whether Mr. Stites plans to bank up around the bottom-board, but I should think that space would be cold for the bees during very cold weather, with only the inch board between them and the outside.

Fig. 2 was taken near Mr. Robert E. Foster's apiary in Montrose County, Colorado. Mr. Foster is standing beside a clump of greasewood. Greasewood is a native of the desert, growing, however, on the lower levels, but rarely found upon the well-drained mesas. It is quite a favorite with the bees, the large yellow clusters of bloom



FIG. 2.—Robert E. Foster standing beside a clump of "greasewood."

attracting them in large numbers. The resemblance to goldenrod is quite marked.

Mr. Foster is apiary inspector for Montrose County, and has done excellent work in reducing the prevalence of foul brood.

Over to the south of Fruita, in Mesa County, Colorado, rise the rocky sides of the mesas. Along the foot of the cliffs flows the Grand River. Sloping gently to the north and east from the river for several miles is some of the best land on the western slope. Apples and peaches are grown by the hundreds of carloads. Alfalfa, sugar beets, and general farming operations are followed by many. Much of the land, however, has become seep land from the application of too much irrigation water or the running of ditches and the application

of water to land lying higher up; and over much of this seep land sweet clover grows, making of this district a valuable honey-producing section.

Mr. F. B. Hill lives about three miles east of Fruita, and has the largest and best conducted apiary I have seen in Colorado. Three long sheds, one of which is shown in the illustration (cover picture for this issue) shade about 120 colonies each. The advantage of these sheds is very apparent if one visits this country in August. The alkali-covered ground reflects the sunlight with a blistering glare. The intense light deceived me, and I over-exposed two films so that they were worthless, and the film this was taken from was so dense it was difficult to get a good print.

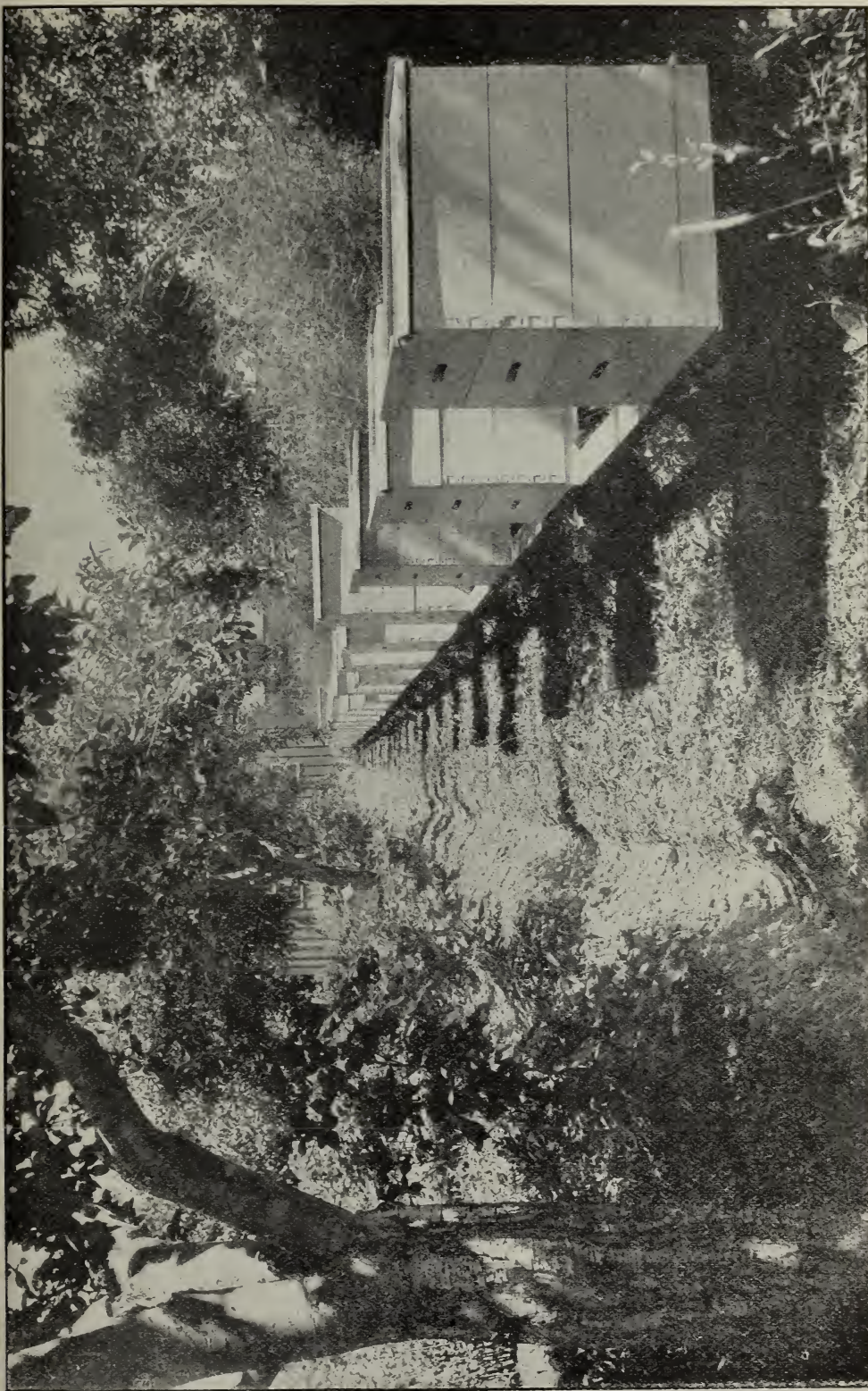


FIG. 3.—One of the rows of hives in Mr. Babberger's artistic garden apiary.

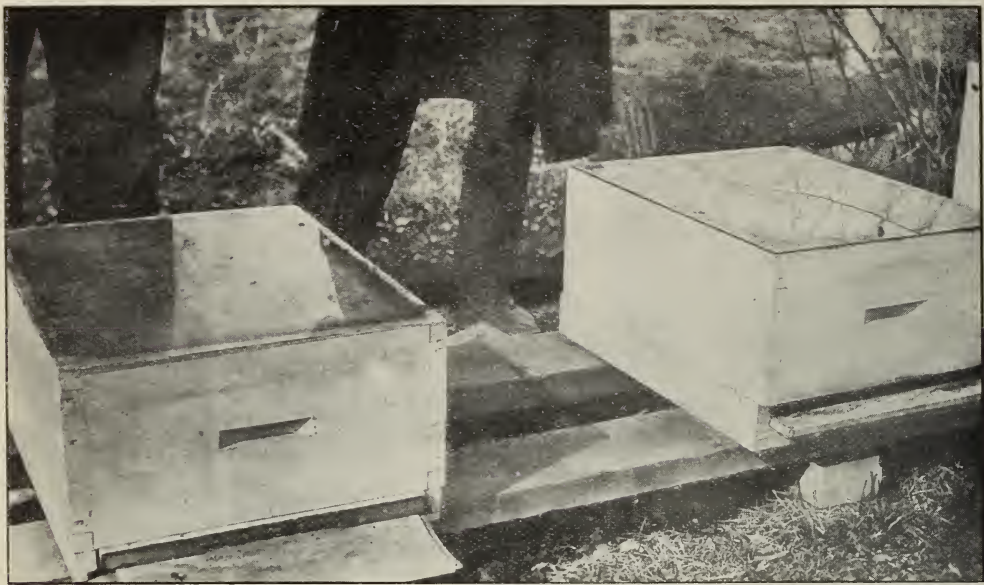


FIG. 4.—Panes of glass used as super-covers or honey-boards.

Mr. Hill "flags his queens," as his hives are so close together in the rows. Different-colored rags are tacked on the fronts of the hives; and red, green, black, etc., spots are painted upon others. A few of the hives have the entire front painted a different color.

Mr. Hill operates his apiary for comb honey in 4 x 5 plain sections, and he secures a beautiful product. He uses shallow extracting-supers early in the season, taking them off and placing them below the brood-chamber when the comb-honey supers are put on. These extracting-supers are left below until fall, when they are removed and put away till spring. They are then put on top full of honey for the bees to use in breeding up. Mr. Hill told me that he sold \$1800 worth of honey this year from his apiary. He operates only his home apiary, having no outyards.

Several months ago I told about the beautiful Canon City fruit district—its sylvan country homes, pretty country lanes, and delightful climate. Now I want to tell you of one of our beekeepers there.

Mr. Babberger is an artist photographer, a fruit-culturist, gardener, and beekeeper. He is a shrub and flower lover, and his little Dutch garden beside his house reminds me of my friend and neighbor Karl Dehn, whose particular passion is dahlias. (I wish you might hear Mr. Dehn pronounce "dahlias" and hear him talk flowers.) Mr. Dehn learned his flower gardening in Berlin; and whether Mr. Babberger gardened

in Berlin I do not know; but his little garden and apiary are worthy of his fatherland.

Mr. Babberger considers his work in the studio far too confining and also too mercenary. People want only cheap pictures, and he does not make that kind. His pictures are worth his price; and when we had our beekeepers meet Dr. Phillips in his studio, Mr. Babberger had his honey piled in the reception room, and he was charging a price commensurate with what he considered it worth. He was asking \$3.50 a case for his comb honey, and was getting it. Some others were selling for \$2.50 and \$2.75; but Mr. Babberger would not sell for such a price.

Probably scores of fruit-growers—neighbors of Mr. Babberger—have stopped when driving past his apiary to admire the white rows of hives between the apple trees, one of which is shown in Fig. 3.

Mr. Babberger harvested 2300 sections of honey from 25 new swarms, and has always counted on ten dollars' worth of honey from each hive. The spraying for the leaf-roller destroyed a good many of his colonies last spring, so that his crop was very small.

If we could have half a dozen beekeepers in each county like Mr. Babberger they would have a wonderful influence in raising the standards of bee culture. Mr. Babberger uses the Danzenbaker hive and 4x5 sections. One of his special hobbies is the use of panes of glass for honey-boards.

He claims for them many advantages, chief of which is the ease of diagnosing the condition of the colony without disturbing the cluster. The glass requires cleaning about every two years. Two hives with the glass in place are shown in Fig. 4.

Boulder, Colo.

BEEKEEPING IN WEST FLORIDA

S. S. Alderman a Progressive Beekeeper for Forty Years

BY J. J. WILDER

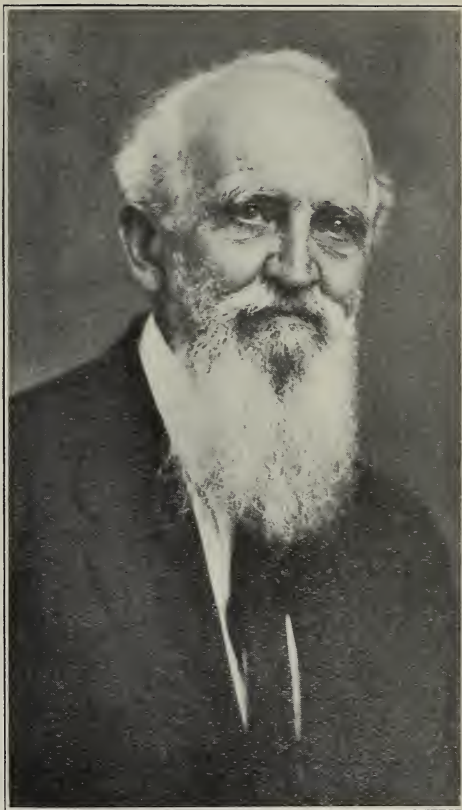
This year I had the opportunity of making a 3000-mile tour or ramble visiting beekeepers over the Southeast, and it was my great pleasure to meet some of our old landmarks in beekeeping; and among others were Mr. J. K. Isbell and S. S. Alderman, near Wewahitchka, Fla. Both gave me something of their ripe experience in beekeeping, and Mr. Alderman gave me his photograph and some data regarding his experience. His letter follows:

The first bees I owned were bought in 1872. The apiary was located at the "Old Fort" place, 7 miles from the postoffice now known as Wewahitchka, Calhoun Co., Fla. This embryo apiary of 70 hives was turned over to the care of a young man, J. B. Roberts, who was a natural apiarist, but he knew nothing of the advanced methods of beekeeping. I persuaded him to try new hives, and we worked together for twenty years, during which time we increased the number of hives to 700 at the "Old Fort" place. At this period I began to scatter the apiaries, placing the bees near the feeding-grounds, until I had six apiaries, numbering in all about 1400 stands. The yearly yield from this number was 84,000 lbs., which was extracted and shipped in barrels to New York and Boston.

The principal flora from which the crop is gathered is the tupelo gum and the orange bloom. This latter flower is a favorite of the bees, and suggested to me my trade-mark, "Orange Bloom," which I had patented about 1880. The "Orange Bloom" has one great advantage over any other honey, it will keep for ever without granulating. This "Orange Bloom" honey took the first premium at the Atlanta Exposition, and I was awarded a medal.

I was born in Marianna, Fla., March 19, 1835. My parents were both born in England. I have been engaged in the honey and orange business for more than 40 years, having been blessed with fine health most of the time.

Mr. Alderman was a good beekeeper the year I was born, or 40 years ago, and all the way down the line of years he has been a good and progressive beekeeper—not in and out, but year after year he has continued in his main line of business, that of producing "Orange Bloom" honey. He has produced trainloads of it, and has thereby gathered up around him considerable of this world's goods—at least enough to make him very comfortable in his old age. He spends the summers up in the mountains of North Carolina, and the winters at



S. S. Alderman, of Wewahitchka, Florida, an up-to-date beekeeper for forty years.

his Florida home, which is a beautiful one located on an island on the Chipalo River. His home is surrounded by a beautiful orange-grove on the east and south side, and along by the front flows the beautiful river. A more beautiful or more modern home can not be found in our Southland.

A glance at the face of this veteran beekeeper will show that he has been wonderfully blessed with health. It is strange that he has not been a great writer on bee culture, for he is very intelligent. A better type of beekeeper can not be found in all beedom.

Cordele, Ga.

WHY ORDERS FOR QUEENS CAN NOT ALWAYS BE FILLED AT ONCE

BY PENN G. SNYDER

With reference to Mr. Lewis P. Tanton's article, page 581, Sept. 15, I have made it one of my business principles to reply as soon as an order is received. I use a printed post card that requires only the name of the purchaser and date the order



The effect of poorly attached starters. Notice the combs in the two middle sections have fallen, leaving a space for the bees to fill in to suit themselves.—Sires & Sires, Wapato, Wash.

will be filled. To say the least, however, it is difficult to guarantee to have queens on a given date.

There are several distinct reasons why the expected queens may not make their appearance as expected. "There's many a slip 'twixt cup and lip" is a very true statement when speaking of bees. Our bee pets(?), as we all know, sometimes disregard all rules, regulations, and standards, and apparently set out to see how mean they can act.

One of the many things that sometimes happen is that, after the cells are started beautifully, a couple of days later they may be cut down. They may be chilled or possibly jarred in handling. An unexpected queen-cell in the brood-frames might hatch and destroy them, or a small virgin from an unknown source might get through the protecting zinc which I use to cover all entrances of cell-building colonies.

Then there seems to be nothing easier for the queenless bees in nuclei than to destroy the cells or virgins given them, or for the virgins to disappear while on their mating-trips.

The queen-rearing business is not all "beer an' skettles," as one can readily find out by making an experiment when conditions are not favorable—when there has been no honey gathered for a month or so. Under the best of conditions it is easy to obtain plenty of good queens; but when conditions are the reverse, then comes the need of skill, patience, and knowledge. Then the weather plays a very important part in determining the success of all efforts, to say nothing of the honey-flow.

Yet all this can not excuse the queen-breeder in not replying *at once* to all orders as all up-to-date business men do. He can at least promise, and then do the best he can to fill the order on the date promised.

Personally I can heartily agree with Mr. Tanton in his arraignment of the greater

number of the producers of bees and queens. It is more than annoying to send an order, and receive no reply, possibly, for weeks—an experience I have had repeatedly in years past. "None but the brave deserve the fair." We bee-men can change the above quotation to "None but the prompt deserve our orders," provided they are filled with good stock in good condition.

PURE GOLDEN BEES ARE NOT CROSS.

I have a growing complaint to register. The editor invariably, in speaking of "Goldens," states that they are often very cross, also that they winter poorly. Now, that may be true of some of the strains composed of more or less Cyprian blood; yet in the manner in which the term is used it gives Goldens as a whole, irrespective of strain, a black eye.

I have in my home yard about 80 colonies of Goldens, to say nothing of nuclei, and I do not use a veil on an average of one hour out of ten while working in this yard. I can give names of many beekeepers who have been in this yard, who have seen me, without smoke and without preparation, and, last of all, without stings, open colonies containing eighteen or more combs of brood. Just after a rain, or during one, I have frequently opened the hive containing the breeding queen, and have received *no stings*.

Two years ago I sold to a gentleman in Porto Rico a two-frame nucleus with a tested queen. When the hive was full of bees, and they were working on the supers, his two young sons were discovered grabbing out the honey by the handfuls from the extracting-combs. The children were more or less covered with bees, yet neither of them received as much as one sting. Are such bees cross?

Swarthmore Apiaries, Pa.

[Undoubtedly there are many colonies of Goldens that are gentle and also hardy;

but in our long experience of years we have found that the *majority* of Golden's are below "par" on these two points.—Ed.]

THE COMBINED SUMMER AND WINTER SHED A NUISANCE

BY G. C. GREINER

The general tone of Mr. List's article with its illustrations, page 766, Dec. 1, suggests beekeeping after the old-fashioned let-alone plan. For that kind of management, his combination summer and winter sheds, or stands, as Mr. L. calls them, offer some advantages, although I should prefer a finer material, such as oats, wheat, or clover chaff for packing instead of straw. But for the beekeeper who aims to get from his bees "all there is in 'em" by practicing up-to-date methods, such a thing as "summer and winter stand combined" does not exist unless we apply that term to the properly constructed chaff hives as they are listed by our regular bee-supply establishments. And even these are not as readily accessible and easily managed as a single-walled hive.

The only way that will allow the easy, convenient, and time-saving manipulations of a season's campaign, is to have hives spread over the ground, on separate stands, with about two feet space between. Does Mr. List imagine the time and work it takes to remove the sheds and spread the hives in the spring, and then move them together again in the fall for winter packing is lost labor? If he will follow up the season's innumerable manipulations that are unavoidable with modern beekeeping, such as examining in the spring, feeding, equalizing and spreading brood where necessary, artificial increase, and "shook" swarming, dequeening and requeening, adjusting and readjusting of supers, then a little later the extracting work, and, still later, removing the last supers, feeding for winter, and uniting where necessary, and many others that may unexpectedly loom up in the routine of the season, he will see at once that the time saved by having hives conveniently placed will do that little extra work he considers "unnecessary" a dozen times.

To the experienced beekeeper the disadvantages of crowding bees into close quarters, as shown by Mr. L.'s illustrations, are too well known to need any comment. But I would caution beginners and prospective beekeepers never—no, never, if it can be avoided, to plan arrangements of this kind. It is bad enough to fight the ill-tempered individuals of one colony; but when six are

aroused every time one hive is touched, the overdose becomes (to express it mildly) an annoyance. Individually I am practically immune to bee-stings, although I do not enjoy them; but to the great majority of the human family they are an undesirable donation. For the good of all concerned, bees included, all unnecessary aggravation should be avoided.

In the sheltered position behind the raised roof of his stand Mr. L. may not notice the disturbance he causes to all the inmates of the stand whenever he manipulates either one of the six; but I can assure him that the least jar, even the opening of his roof, is felt by every bee in the lot; and under certain conditions it would be sufficient cause to put the whole company on the war-path.

A slight change in the construction of his cases, which would greatly improve their efficiency as a winter protection, and at the same time preserve both cases and hives, may be an acceptable suggestion to Mr. List; or if not to him to some one else. The opening below the hinged front all along the bottom should be closed by letting the front—in fact, all sides and ends—pass down below the floor. This would shut out water, and keep the snow from blowing in. As it is, a heavy drifting rain from the right direction would saturate the whole under part of the cases and their contents full of water, which a sudden freeze would transform into ice. Snow also is liable to drift in around the straw, which straw would, under certain changes of temperature, undergo the same transformation, and surround his hives with an icy inclosure. While these conditions may not be absolutely destructive, they are in no way conducive to the welfare of the bees.

La Salle, N. Y.

CLIMATIC CONDITIONS AND SURROUNDING FACTORS TO BE CONSIDERED

Windbreaks for Winter Protection; Too Much Shelter Allows the Bees to Come Out when the Air is too Cold

BY A. J. HALTER

I note with interest what Mr. Holtermann says on p. 776, Dec. 1, with reference to tight board fences for windbreaks. Probably his location is more adaptable, owing to climatic conditions. I can not argue from his standpoint, and will only relate my own experience, based on conditions in this locality, a distance of 40 miles south of Lake Erie.

When I first began wintering bees with



Double-walled hives containing live bees buried in snow.

windbreaks I bought a lot of binder canvas, nailing it on posts, taking two strips high, thus affording a height of six or seven feet, and placed the hives to the east of the windbreak. This, with a shield of large apple-trees, seemed a good protection except in case of a few end colonies which were a little weak the following spring. The next season a strip to the south side was added, forming an L, and the bees wintered well, for there was scarcely an air current back of this tight windbreak. Only an eastern or southeasterly wind could reach the entrance of the hives (all hives faced in a southerly direction), and I felt that I had some assurance of successful wintering so far as windbreaks were concerned.

The next fall windbreaks were again put in proper position as last stated, every thing progressing favorably, there being plenty of snow, and the bees were in fine order. About the same time I built a ten-foot tight board fence on the north side of an outyard—there being buildings to the east, and woods and elderberry bushes to the west of the apiary.

The bees did not have a flight for some time; and during the latter part of February there was about a foot of snow. The temperature suddenly rose to about 50 degrees by this time, with a bright sunshine mingled with a light breeze which was melting the snow very rapidly. That evening a neighbor who had passed the yard a short time before informed me of what had happened. The next morning I went to investigate; and, to my astonishment, I found thousands upon thousands of bees scattered all over the snow outside of the windbreak

for a radius of 300 or 400 feet in a westerly and southwesterly direction, and one could scarcely step without treading on bees. The ground was still covered with plenty of snow, even around the hives, where great numbers had also fallen in the melting snow and were lost. There were over a hundred colonies in this yard; and when spring came, several colonies were dead. The rest were very weak. There were, perhaps, ten colonies all told that built up strong enough to store

surplus at the beginning of the honey-flow.

After having viewed the situation I proceeded to visit the outyard which was protected by a tight board fence on the north side only, and arrived there about noon. The snow had a very thick crust, caused by a heavy freeze directly after the thaw. What a relief to find only a few bees imbedded in this crust of snow! I began to study the situation, for the bees had not come out for a flight at the outyard except from several scattering colonies from which a few had emerged. This is how I summed up the situation: At the yard where the windbreak was on the west and north, the sun heated up the hives and immediate surroundings, as the air currents were almost entirely shut off by the windbreaks at the stated time, and it became warm enough for bees to fly out in great numbers. But when they came in contact with air currents they became chilled, and dropped on the snow outside of the windbreak, never to return. At the other yard, the air or breeze came in among the hives and did not warm up enough for the bees to venture out.

Since that I have not put up canvas, but just pile up hive stands or boxes about five feet high where light air currents pass through, and have not had any loss by bees flying out. They seem to winter as well as those at the outyard where the ten-foot fence is still retained and where the hives are placed in five or six rows, about twenty in a row facing south.

Last winter the mortality was mostly in hives in the center rows, being about 35 feet south of the high board fence. What explanation can be given? Possibly the

severe north and northwest winds coming in contact with fences and buildings on the east was forced back and scooped down to the surface of the ground only to rise again in accordance with laws of distribution. This was probably only an incident in accordance with directions and velocity of storm; but would it be wise to reconstruct the situation thus, providing a repetition might come from some other direction? This idea of windbreaks seems about as perplexing to me as the swarming question. When all looks well, something is sure to be wrong. If we knew of coming weather conditions it could be solved accordingly; but as most of our storms or cold winds come from the west or northwest, we naturally make provision accordingly; but when an eastern storm comes we simply say, "It won't last long."

My idea of a windbreak is a location where severe and cold winds are elevated to pass over a certain obstacle, which is more natural where hills or valleys are natural landscapes. An apiary located on a side hill with this natural protection would be the ideal; but, unfortunately, only a small number of beekeepers are so located, and these must adopt the artificial to the best of their judgment and surroundings. A light breeze in an apiary located back of a windbreak is, I believe, essential, as it will bring pure air and destroy dampness, and is less apt to lure bees from the hives until conditions are safe for a general flight. My observations along this line lead me to believe that careful study of climatic conditions and surroundings are the main factors in constructing windbreaks, and that success can be obtained only under favorable conditions.

Akron, O., Dec. 10.

[See editorial.—Ed.]

BEES BURIED UNDER A FOOT OF SNOW AND ICE

BY F. J. LILLIE

The photograph shows how I dug my hives out of the snow March 1, after they had been buried under a foot of snow, having a heavy coat of ice for four weeks. I thought the bees would be all dead; but I lost only one colony out of ten. All seemed well supplied with stores.

Corry, Pa., April 1.

EXPERIENCES OF A FOUL-BROOD INSPECTOR

Superstition and Ignorance

BY J. E. CRANE

Continued from page 21, January 1.

The ignorance of the great mass of beekeepers is past comprehension. So far as I can judge not more than one in six in some sections ever reads a bee journal of any kind. Most of them know little and seem to care less. One family on whom I called told me that the reason their bees had done so poorly was because they had sold bees and had taken money for them. No argument on my part could convince them to the contrary. It was of no use to tell them that the season had been unfavorable. No; they had sold bees and had taken money for them, and they must suffer.

Many seem to think that, if they succeed in hiving a swarm, and then place it on a stand in the back yard among the bushes, or over by the hog-pen, or leave it sitting on the ground, their work is done.

Somewhere I tipped up a hive from the bottom-board, and began scraping off what appeared to be a scab from the bottom of the combs so as to get into them to examine them, when the proprietor informed me that I was tearing off what remained of the old bottom-board that had stood or rested on the ground until it was rotten, after which the hive, rotten bottom-board and all, was set on a new board and given a stand.

One man declared to me that the apple worms (tent caterpillars) got into his hives and spoiled combs. "Do you know they were tent caterpillars?" I asked. He said he did, for he could see the cocoons they had left! A friend of mine, an inspector in another State, tells about finding a hive standing on the ground, and weeds growing up through it; also of another where the combs had been cut out and old burlap stuffed in to fill the empty space.

An experienced beekeeper was telling me how one of his neighbors came to him in trouble. His bees had been getting something that made them drunk. He went over to see what was the matter, and found that the hives were standing about two feet above the ground while the day was cool, and all of the bees that missed the entrance fell to the ground, and, being chilled, were unable to rise again, so they crawled aimlessly around to be reported by an ignorant beekeeper as drunk. What a shame! I have said to myself many times, "If bees will live under such conditions, what would they do

with intelligent care?" No domestic animal would live with such treatment as bees receive. It is a great pleasure, after visiting such beekeepers, to meet intelligent apiarists who are readers of bee journals. They know who the inspector is, what he has called for, and are ready to give him any assistance in their power. They don't need an inspector, for they have been doing their own inspection, and can tell to a dot just the condition of their bees, and whether they have any contagious disease or not.

I called on one of this class; and after I had looked into a good many hives he said, "The colonies in that row of hives have Doolittle queens; in that row, Moore queens; and in that row Hand queens," and I envied him the fun of watching the differences in these three strains of Italian bees, for he had enough to give him a pretty good idea of their relative value. The inspector would like to stop to visit a long time with such; but "beesness is beesness," and he must move on.

SOME OBSERVATIONS ON EUROPEAN FOUL BROOD.

European foul brood in an apiary is always an interesting study. If the disease has not made great headway, I have found from one to three colonies very bad, and between a dozen and twenty in the earlier stages of the disease. There seems to be some relation between the very bad and those in which the disease has only begun its deadly work.

I visited a yard the latter part of the summer where I found the disease well advanced and in all stages. In this yard the whole process of ruin could be observed. The first colonies that came down had reached the last stage, and were a mass of worms, filth, and cocoons. Only one out of twenty-four colonies was still healthy, while the rest were in all stages of foul brood.

When the first colonies that come down become weakened, robbing sets in and disease is carried to the other hives. As soon as the bees become too weak to protect themselves against moths the one happy home is soon changed into a mass of ruins, and the beekeeper vainly believes that the moths are at the bottom of his trouble, while they are only the scavengers that have consumed what was left by disease and the robber bees.

QUESTIONS ASKED.

The questions that are asked an inspector are often amusing. For instance, "How long does it take to learn beekeeping?" To this I reply, "I have been at work learning for more than forty years, and

haven't it all learned yet." Or a more frequent question is, "Do bees ever sting you?" "Yes," I tell them, "I suppose I have been stung more than seven or eight times in the past forty years," and likely I may hear their exclamations of surprise that I should continue the business and take such risks.

THE RIGHT WAY TO MANAGE.

It is a great relief to me when I get such a letter as I received last summer from a woman in a neighboring town. She said she was afraid that they had foul brood among their bees, so she had sent a sample to Washington. Later she wrote me that it proved to be genuine European foul brood. I was not surprised, a little later, when I called, to find GLEANINGS on the table. Now, how sensible! She had inspected her bees and had observed something wrong, and had done just the right thing in sending a sample of the brood to the Department of Agriculture at Washington instead of waiting until her own yard was ruined and her neighbors' yards exposed. If all who keep bees were as prompt, the disease would soon be stamped out.

WASTEFUL NEGLIGENCE.

In opening hives I have been surprised at the great amount of drone comb I find near the center where brood-rearing begins in early spring, and where worker comb is to the last degree necessary.

I often find combs lying around on the ground and going to waste that might be saved and made into wax. I have often thought it would be money well spent to send an inspector around among beekeepers to instruct them, even if there were no such thing as disease. I wonder if they would take the lessons to heart, and practice what they were taught.

Middlebury, Vt.

To be continued.

THE TREATMENT OF EMPLOYEES ON A BEE-RANCH

BY SUBSCRIBER

My own experience in California was something after the same style as the experience given on page 350, June 1, so it may interest some of your readers.

The majority of ranchers in this State, including the beekeepers, appear oblivious of the fact that their hired help are of the same flesh and blood as themselves, and that, possibly, may account for the treatment meted out to them by their employers.

I answered an advertisement for help on a bee-ranch, not because I knew any thing about bees, but simply that I was out of employment and needed the money. I was

to receive \$30.00 a month, and room and board. The room was the veranda. I was supplied with a spring cot and blankets.

As to board, breakfast consisted of badly cooked greasy bacon, dry bread with a tough crust, flapjacks cooked in an old frying-pan which was as black as charcoal, inside and out (honey supplied the place of butter and sugar), canned milk liberally watered, and prunes. The latter were put on the table in the same pan in which they had been cooked. Dinner consisted of fried bacon, boiled beans, and a kind of stew composed of macaroni, tomatoes, potatoes, and bacon grease. Bacon and leftovers from dinner were used for supper. I saw fresh meat about half a dozen times in three months, and then it was usually liver. When the crew worked the apiaries away from home, the lunch consisted of canned beans, a cheap grade of sardines, and dry bread.

The cook employed by this outfit was an old man past 80, who had been a miner in the early days. What salary he received I never discovered. I only knew that he never by any chance cleaned out his kitchen, the floor of which bore the grease of ages.

As you may readily imagine, a few days of this kind of thing was usually sufficient for most of the help who came. As an inducement to some of the help to stay, they were offered a bonus of \$5.00 per month if they stayed during the entire season. But this failed to hold most of them.

A young fellow from Chicago, after putting in about four months, was carrying a hive of bees, when he stumbled. The owner happened to see him, and shouted, "If you had dropped that hive I would have knocked your d—d head off." I asked the young man why he stood for that kind of thing, and he replied, "Oh! he wants me to quit so he won't have to give me the extra \$5.00." Is this the kind of treatment to be expected on bee-ranches?

About this time of the year a good many men from the East come to California in answer to advertisements for help. Let me give them some advice. First, if you can get any kind of labor by which you can get enough to live on, stay where you are. I honestly believe from personal observation that there are more able-bodied men working for their board and a small pittance, in the State of California, than in any three other States in the Union.

Second, hired help in most ranches is required for only a few weeks, after which the men must hunt other work. They must carry their own bedding. The board is inferior, and so are the sleeping accommodations.

There is an old story told of a hired man who, on asking the employer where he was to sleep, received the reply, "I own 5000 acres around here, and you can sleep anywhere you like outside the house."

[We are afraid our correspondent is a little hard on the California men as a whole. We have known students who have been treated most royally by their employers in the Golden State.—ED.]

BEEKEEPING IN THE SOUTHWEST

The Scholl Improved Hive-numbers

BY LOUIS SCHOLL

Continued from page 43.

course, the number can be painted with a brush, but it can not be done as nicely nor as quickly as with the rubber stamps.

They are easily applied to either end of any story at any part of the hive by simply hanging over the edge of the upper story or the rabbet of the hive. Fitting snugly, they do not interfere with the ends of the frames nor with any upper stories or supers piled on, nor with the covers, as those slip right over them. These numbers can be changed quickly to any other part of the same hive or to any other hive.

They are always securely in place, being either locked down by the covers of the hives or the upper stories and supers. Hence they can not be misplaced easily by a strong wind, and are more secure against mischievous depredators who might be apt to remove them or exchange them on the hives, and thus cause considerable trouble.

They are cheap and everlasting, therefore, and I am giving them to beekeepers who desire a good hive-number as the "Scholl improved number-tags." You are welcome to use them if you like them.

New Braunfels, Texas.

CONVERSATIONS WITH DOOLITTLE AT BORODINO, NEW YORK

Continued from page 44.

In addition to what I have already given you, use partly finished sections, which are generally quite numerous during the middle of July; and if you thin the honey to about the consistency of the nectar as it comes in from the field when it is given to the bees you may be quite certain of a profitable outcome. Lacking in any of the points given, any one trying the experiment is likely to conclude that his time and honey can be more profitably used otherwise.

WHY DO BEES DISLIKE BLACK?

Some Interesting Data; Black Objects Stung by Bees because More Visible

BY JOHN H. LOVELL

In GLEANINGS for December 1, 1912, Mr. J. E. Crane says that it is the almost universal opinion that bees dislike black. So far as my experience goes (and I have given considerable attention to the matter during the past few years), this would appear to be undoubtedly the opinion of the majority of American beekeepers. Now, why should bees dislike black? They will gather honey indefinitely from a piece of black paper or from a black dish. A part of my winter cases are painted black; but I have never been able to discover that the bees exhibited any antipathy to them on that account.

On the other hand, let an animal wholly or partially black approach the hives, and the evidence is most convincing that it will receive more stings than if it were entirely white. Of a flock of twelve black chickens running in the bee-yard, seven black ones were stung to death while the five light ones escaped (GLEANINGS, March 1, 1911, J. Ridley). A dog with a black rump is badly stung on this part, while the white portion of his body is comparatively free from attack (GLEANINGS, March 1, 1911, H. C. Driver). As mentioned by Mr. Crane, a white horse may be driven near the apiary with less danger of its being stung than a black one. Another correspondent has told how a white dog ran among the hives without attracting much attention, while at the same time a black dog was furiously assailed by the bees.

Many beekeepers report a similar experience from wearing black clothing. A white coat does not excite the bees so much as a black one (GLEANINGS, March 1, 1912). Dr. Miller gets more stings when he wears a dark suit than when he wears a light one (GLEANINGS, Dec. 1, 1906). Mr. Huber H. Root had a black felt hat "literally decorated with stings." On changing to a gray hat he did not get a single sting. The black head of a hat-pin is repeatedly attacked by bees. A pair of black stockings substituted for bee-gloves is literally "peppered." The editor of GLEANINGS has related that, while examining one of the apiaries of Mr. E. D. Townsend, he wore a dark suit and received more stings than Mr. Townsend, who was dressed in a white one. Elsewhere he has expressed the wish to have the question discussed further.

All beekeepers, however, do not agree

that it is the black color which excites the anger of the bees. One observer suggests that it is a question of education. Editor Root received more stings than Mr. Townsend because he was a stranger. The bees would have treated him more kindly if he had given them a little time to get "educated." However this may be in the case of beekeepers, it does not help us any with the black and white dogs, or the black and white chickens. Here both were equally strangers. Another beekeeper thinks that it is not so much the darkness as the roughness or hairiness which annoys the bees. To this Dr. Miller replies that he has seen at least a dozen bees viciously jabbing at the smooth glass head of a black hat-pin, following it for half a day.

The *Irish Bee Journal*, according to Dr. Miller, hinted that had he put on a clean shirt he would have had fewer stings; that is, it was the odor and not the color which offended the bees. As would be expected, the doctor replied that the shirt was newly put on, and was void of offense in the particular mentioned. Dr. Miller's photograph, indeed, effectually refutes such an imputation. The above-mentioned editor seems rather to scout the accepted opinion, and says that he has worn a black felt hat and didn't get any stings. St. Patrick, so it is authoritatively reported, formerly drove all the snakes in Ireland into the sea. Possibly the good saint, while he was about it, blunted the stings of their bees a little. However it may be in green Erin, bees in America certainly sting black objects, if endowed with life, more freely than they do white.

Let us consider for a few moments the psychology of colors in an endeavor to ascertain if one color ever irritates more than another. A bright-red garment, as many know from experience, will greatly enrage the turkey-gobbler or a bull. Boys sometimes use pieces of red cloth as a lure to catch frogs. Physicians state that children wearing bright-red clothing and people living in bright red-rooms are often very nervous and irritable. These symptoms disappear when another color is substituted. There are persons who can not bear to look at red. The case of an officer is cited who was made giddy by red.

There is a word for red in every language, but not always one for blue. Savages use red pigments in painting their bodies more than any other hue. Red is claimed to exert more motor power on the eye than blue. Soldiers are no longer dressed in scarlet. Persons suffering from melancholia are benefited by looking at red; but insane patients may be rendered uncontrollable. A

man will become intoxicated more quickly in a room painted red than in one which is blue.

Smallpox patients escape pitting if they are placed in rooms with red glass. Under the advocacy of Dr. Finsen, red-light treatment has been widely extended. There can not be any doubt that red waves of light tend to excite the nervous system. The ether waves which give rise to the sensation of red are longer than those of any other color. Accordingly we should expect that the color with the shortest waves, as violet, would produce the opposite effect, or be very depressing. This is the fact; and those who live in dark-blue or violet-colored rooms are apt to be low-spirited. It is said that state prisoners in Russia are sometimes confined in rooms with the walls painted a deep violet, with the result that the mind in time becomes enfeebled and helpless. Red in moderation is a warm stimulating color; but in excess it becomes an irritant.

If black were a color we should conclude that the waves of light from it irritated the bees. But black is not a color. An object is black because all the rays of light are absorbed; it is white because they are all reflected. Now, we do not see how black can irritate the bees when it does not, like red, give off any rays of light to affect them. The physical cause, waves of ether, is absent. So far, then, as finding out why bees sting a black animal more than they do a white one, we do not seem to be much better off than when we started; but we have narrowed the problem.

Are, then, bees angered by black?

We think not.

Is there no other explanation of their apparent dislike for black?

Some time ago, if I mistake not, it was suggested in GLEANINGS that perhaps the true explanation is that bees see a black object more quickly than they do a white one. This, in my opinion, is correct. Undoubtedly in the glaring white light of a day in midsummer a black object is more rapidly seen than one which is white.

In the polar regions all forms of animal life, whether mammals or birds, in the winter season become white like the snow. In contrast with the vast expanse of white landscape a black object would be very conspicuous. A black coat is equivalent to a death sentence. A bee hastening out from the darkness of the hive would more readily see a black object than one which, like white, is less visible in the intense light. Like white, a mirror reflects the larger part of the rays of light; and if one could be constructed which would reflect them all it

would be invisible. Failure to detect the presence of a mirror has, indeed, been the cause of many mistakes.

Again, a black surface in bright sunshine is several degrees warmer than a white surface. This additional heat may also exert some influence in attracting the attention of the bees, though this is doubtful. As bees pass so large a portion of their time in the darkness of the hive, it would certainly seem improbable that blackness *per se* would annoy them.

The disposition of the bees and the way in which they are handled are likewise factors which must be considered. Nor in emphasizing the supposed dislike of bees to black must it be forgotten that they very readily sting white objects. The case was mentioned of a beekeeper who used a pair of black stockings instead of gloves, with the result that they were stung very badly. I always wear white gloves, but at times the bees attack them very fiercely and in great numbers. On the whole, then, the supposition that bees see a black object more readily than they do a white one seems to afford a satisfactory explanation of why at times they sting the former more freely than they do the latter.

It follows that one of the principles of apiculture is: Let every beekeeper dress in white.

Waldoboro, Maine.

CARNIOLANS AHEAD OF ITALIANS IN MANY RESPECTS

Their Tendency to Swarm Excessively Overcome Easily

BY E. F. ATWATER

In this locality we have never had black bees unless rarely from a mismated queen sent here by some breeder in the East or South. With this condition, and for many years with nothing but Italian bees, we are prepared to say that the idea so often advanced that Italians will, when left to themselves, degenerate to blacks, or approximate that type, is a myth, pure and simple. The existence of this long-time myth, false as it is, has been dependent on the fact that in most localities the bees, of more or less black blood, in woods or rocks or box-hive apiary, will rear a vast number of drones compared to the few that are usually allowed in an up-to-date apiary.

Excellent as are the Italian bees, they are not superior in all respects for all localities. For several years we have been slowly and rather cautiously adding a little Carniolan stock. We know that the Carniolans (not necessarily pure Carniolans), rightly man-

aged, will average to bring a larger force to any flow than any strain of Italians.

Unlike Mr. Holtermann, p. 10, Jan. 1, 1912, we have had excellent success with these bees when using the eight-frame hive; but we add one or two stories to accommodate them before the flow, or else we draw from the Carniolans to build up the Italians. However, we are working more toward a large hive, using ten-frame size largely, and have no doubt that in many ways the twelve-frame may be better.

BANATS A FAILURE FOR COMB-HONEY PRODUCTION.

Three years ago the enthusiasm of a near-by beekeeper for the Banats led the writer to try 130 queens of this stock, as they were very highly recommended by several. They were one of the finest and most uniform lots that I have ever seen, and they arrived in splendid condition after their long journey. They were nearly all successfully introduced. This was one of the most disastrous mistakes in my experience. The much-praised non-swarmer comb-honey Banats will build up to great strength in the spring (much like the Carniolans), swarm as much as any bees, and when a good flow comes they crowd the brood-nests (if comb honey is produced) so that they are scarcely numerous enough to work one super when the second flow arrives. They winter well, but their product will run at least one super per colony less than any bees that I have ever owned. Only one Banat colony of all that I have owned has made 100 sections of comb honey, while many Italians, in the same season, far exceed this amount. This inferiority is not so apparent if extracted honey is the product; but naturally the Banats are being weeded out of our apiaries, while the Carniolans are being used in increasing numbers.

We usually buy and breed some of the best Italians every year, having, one season, 30 Italians from a famous breeder that gave us at least one dollar per colony more than the average from the remainder of the yard.

Since but few breeders can supply purely mated Carniolan queens, we sometimes buy many of them mated to Italian drones, as that strain is better than a lot of uncertain black and hybrid bees. Then we have an imported breeder to use when we have time to rear some of our own queens.

We have occasionally had a few Carniolan colonies that would fill two supers before any Italian colony would fill one, and their white cappings and hardness are valued while their prolificness is a decided help in handling disease. If it is true that

the Italians are so superior to the Carniolans in handling disease, how is it that the late Capt. J. E. Hetherington, with his thousands of colonies, was, before his death, introducing hundreds of Carniolan queens into both the Virginia and New York apiaries, in the latter yards finding them a great aid in combating disease?

If they are such great swarmers, how is it that Capt. Hetherington could handle them to advantage in his many yards?

If, as claimed for them, they are likely to convert their surplus into brood, how is it that our helpers find our Taylor yard, mostly Italian blood, very light for winter, while in the Highland yard, three miles south, with Carniolan stock, the hives are packed with stores?

If they are such great swarmers, how is it that a row of 20 of them in the home yard, with but little care, made over 100 lbs. per colony, and cast only two swarms, while the entire yard averaged but 63 lbs., there being but little Carniolan blood in the other colonies?

The beekeeper who can not adapt his manipulations to the racial characteristics of the Carniolans had better continue with the Italians. But for those who will so adapt their methods, the Carniolan race offers some marked advantages in some localities.

Meridian, Ida.

Preventing Granulation in Comb Honey

In looking over a copy of GLEANINGS for May 15, 1909, page 305, I notice an article on candied comb honey, by Frank Rauffuss. In the footnote to the article you speak of experiments you were at that time conducting in trying to liquefy candied comb honey without spoiling the sections in any way. You say the chief difficulty is in keeping a steady temperature. This subject has interested me for some time past. If you will give me any information in regard to the experiment I shall be greatly obliged.

Forest Park, Ill., Dec. 16. J. W. ALLERS.

[We finally abandoned all attempts to keep comb honey liquid by very high heat. We do, however, store our comb honey in a room, the temperature of which rarely goes below eighty degrees Fahrenheit, and we aim not to let it go above ninety. A rapidly changing temperature from cold to hot, and *vice versa*, is conducive to granulation. We have actually reduced granulation by keeping the honey around 103 degrees Fahrenheit; but the expense of the undertaking is far greater than the advantages warrant. Besides this, there is very great danger of the honey melting down suddenly so that large quantities are lost outright. Some combs will stand a higher temperature without sagging down than others, and some honey requires a higher temperature to be reduced, so that, take it all in all, we have come to the conclusion that the best way is to sell comb honey *before* it granulates, and not be obliged to resort to expensive experiments after granulation has actually begun.

By a little effort granulated comb honey can be sold. There is nothing wrong with it so far as taste is concerned, although if sold indiscriminately to those who do not know what it is, it is likely to cause suspicion of adulteration, the average person thinking that it has "gone back to sugar."—Ed.]

Heads of Grain from Different Fields

Making Increase and Honey at the Same Time; Feeding Candied Honey as a Winter Food; Carniolans Excessive Swarmers

I have 20 stands of bees (Italians), and want to build up to at least 100 the coming season, at the same time getting what honey I can. I have planned to set aside a few hives to work for increase, dividing as soon as I safely can in the spring, and by so doing leave half or more of my bees to harvest undisturbed what honey they can.

From the time the first willows start in April until the last of the sweet clover and goldenrod is killed by the frost in October we have no time when pollen and nectar can not be found if the bees can fly.

I have some 175 lbs. of thick honey, candied, that I am holding for stimulative feeding, but have had no experience; in fact, the past is my first season's work with bees. I was fairly successful in building up by separating into two-frame nuclei, and either providing a queen-cell or eggs and larvae. I am using Danzenbaker ten-frame hives, but shall change to the double-walled of the same dimensions.

Can you give me any hints that will steer me clear of the pitfalls I am apt, as an amateur, to fall into?

Are you still of the same opinion regarding the Carniolans, as when the 1908 edition of the A B C book was published?

I don't enjoy the "glue" left on the frames in the fall, nor do I want to fight swarming all of the time. The last is all that keeps me from trying the Carniolans, and doing away with the Italians.

Ironside, Ore., Dec. 15. A. W. ANTHONY.

[Your plan of dividing your colonies by running one portion for honey and the other for increase is correct. It is usually a mistake to try to secure increase and honey both from the same set of colonies, although there are some seasons when a heavy flow of honey will enable the apiarist to secure both increase and honey.]

For the best methods of increase we would refer you to the subject of "Increase" in our A B C and X Y Z of Bee Culture. The Alexander plan has much to commend it.

Your locality is exceptionally favorable, for it is seldom indeed that bees will be able to secure something, either pollen or honey, whenever they can fly.

Your candied honey can be given to the bees direct, providing it is not dry and hard. In fact, feed in that form is an excellent thing to give to bees either in the North or South. In your climate there is danger that your candied honey will "run" and daub the bees. We would advise putting it in wooden butter-dishes or on paper pie-plates, so that in case it becomes mushy the receptacle will hold it until the bees can take care of it.

In a general way we are not able to give you hints as to how to avoid pitfalls; but if you are a beginner we would suggest that you read "Spring Management," "Robbing," and "Feeding," in our A B C and X Y Z of Bee Culture.

Our opinion concerning Carniolans has not changed since the 1908 edition of our A B C and X Y Z of Bee Culture was put out; and while the edition of 1913 contains new matter and fuller details as to their undesirable as well as their desirable traits in the line first mentioned, we can not make the emphasis too strong that Carniolans are the most inveterate swarmers of any strains of bees we have ever tried. Last year our sixty or seventy colonies of Carniolans at our waterworks yard gave us more trouble in the matter of swarming, twice over, than our five other yards of Italians combined. Ordinary methods of swarm control will not work with Carniolans. For the production of comb honey they would be very undesirable, for the simple reason that the ordinary methods of comb-honey production would

cause them to swarm excessively; but in the hands of some experts Carniolans are excellent for the production of *extracted* honey. We would, however, advise the average beekeeper to try a few of them in a yard by themselves before he invests in them largely. We should much prefer the leather-colored Italians for all purposes, to either Carniolans or Caucasians. The latter are about as bad for swarming as the Carniolans. In these days of out-apiaries it is desirable to have a strain of bees that will swarm as little as possible. The ordinary leather-colored Italians will give as little trouble in this respect as any.

The bee-glue deposited by the Italians is nothing compared with the amount deposited by the Caucasians. The Carniolans are only a little better than good Italians in the amount of bee-glue they use.—Ed.]

Ideas for Up-to-date Honey-house Wanted

I started five years ago with a few stands of bees as a side line to ranching, and they have increased until now they take up practically all my time during the summer.

The expansion of the business makes it necessary to build a new honey-house in which I desire to put all up-to-date equipment for both comb and extracted honey.

I should like to have, through the medium of GLEANINGS, plans for building, location of doors and windows, and placing of equipment for convenience of work and economy of floor space. I can obtain water power from a nearby irrigation ditch to run saw, extractor, and other machinery, and should be pleased to hear from experienced persons as to some manner of installing.

Cedaredge, Colo. GALE H. PATTERSON.

[There have been other inquiries of a similar nature. We should be glad to hear from those who have had experience.—Ed.]

Outdoor Feeding for Supplying Winter Stores

This fall I began looking over my colonies early in October, and found a number of colonies that had not over a pound in the hive.

I took a burlap sack that was woven tight, and made it about the size of a stove-pipe, and about 30 inches long. Then I made some half-and-half syrup, and when it got cool I poured it into this sack and hung it out in a tree about ten rods from the apiary. Then I put a dish under to catch the drip. In this way the weak ones could get their share.

Swartz Creek, Mich.

CHARLES BURTON.

[While the bees of weak colonies get some of the syrup when outdoor feeding is practiced, they do not get as much in proportion. For this reason the safest plan is to feed each colony individually, to an extent depending upon the needs of each.—Ed.]

How Many Hives Needed to Provide for Increase?

Last year I started an apiary in June with 15 three-frame nuclei of pure Italians. The bees built up strong by fall without help, and made about 300 pounds of surplus honey. I wintered them in an ideal bee-cellar, under my residence, with no loss. They came out strong last spring. They increased to 36 good strong colonies, and produced for me 2000 lbs. of surplus comb honey in one-pound sections. Last year was a very poor one for honey in this locality, but the season was very good this year.

I put my bees out on summer stands last spring on April 8. I put them in last fall, Dec. 19. This fall I put them in Dec. 8. My hives will weigh from 70 to 90 pounds now. They are all ten-frame dove-tailed hives.

From the time I set the bees out last spring until about Nov. 1 we had almost a steady flow of some kind. I was not troubled at all by robbers. I had four swarms about Sept. 1. All made good. How many hives should I purchase next year normally?

Lewistown, Ill., Dec. 12. CALVIN BROWN.

[The number of new hives you will need depends largely on your management. If you intend to do all you can to keep down increase you would not need many new hives—perhaps ten would be sufficient. But if you permit natural swarming, or if you follow artificial methods of making increase, you may need as many as thirty or forty.—ED.]

Mixing of Bees in a House Apiary

Dr. C. C. Miller:—I have built for little chickens a brooder-house 100 ft. long and 16 ft. wide. I wish to use the floor for the little chicks, and a shelf 18 inches above the floor to set the hives on, facing the outside, with an alighting-board running the full length of the building. Some distance above the hives is a door 18 inches wide and the length of the building, to raise up in summer time. Do you think the bees would have any trouble in finding their proper entrances, or would give any trouble inside the building?

I thought this a good plan for protection of hives in all weather, and chicks on floor space below.

I have noticed that some say the building must be painted different colors on the outside.

Lafayette, Ind., Dec. 15. WM. H. ROBINSON.

[As the entrances are well lighted there should be no trouble about the bees finding them. Yet with entrances so close together, and all alike, there will be some mixing. Different colors painted over entrances will do some good, but I suspect that bees pay even more attention to form than to color. Some advise different form as well as different color over entrances, as a circle over one, over others a triangle, square, etc. Still better, have trees, or even posts, to help locate entrances. One or more trees within five feet of the building will help much, even if the trees are small. Instead of having the alighting-board continuous, you had better have a separate one for each hive. There should be no chance for bees to get into the building near entrances from outside, unless the building be so freely open that no bees would be imprisoned.—C. C. MILLER.]

Small Introducing-cage did Not Work Well

I have used a queen-cage with the block on one side, described by A. V. Small, page 762, Dec. 1, but it did not work well for me. The queen would stay in the cage for a week after the candy was eaten, rather than crawl out through a hole $\frac{3}{8}$ inch in diameter and one inch long.

I find that it works better to press the cage into the comb about $\frac{1}{2}$ inch, and place in it five or six bees just hatched from the colony to which I wish to introduce the queen, together with the queen. I tie a wire around the frame to keep it from pulling off. I place the frame at one side of the hive, and after four or five days remove it without using smoke. If the queen is out I remove the cage, replace the frame, and do not disturb it for ten days or more.

A. L. C.

The Carbolic Acid Solution Should Not be too Weak

On page 761, Dec. 1, E. D. Townsend says, "We use a one-to-one-thousand solution of corrosive sublimate or carbolic acid." The corrosive-sublimate solution is of the proper strength, and will work all right, but must not be made or used in a metal vessel. A solution of carbolic acid of 1 to 1000 is not strong enough to be of any use for killing spores. When used in place of a 1-to-1000 solution of cor-

rosive sublimate, a carbolic-acid solution should not be less than 1 to 20, and should always be made by pouring boiling water into a vessel in which the proper quantity of acid has first been placed.

THE COFFEE A SUGAR.

On page 771, regarding "A" sugars, before the introduction of granulated sugar in this section of the country we had what was called "Standard" or "Straight A" sugar. This has been displaced by granulated sugar. We also had "Coffee A" which was of a light-yellow color, and fits the description given by Mr. Miller of the "Coffee A" of to-day, with which I am not familiar. Before the introduction of granulated sugar, many merchants would substitute what were known as "Off A's" for "Standard A" sugar; the "Off A's," as the name implies, were a little off in color, and moister than the "Standard."

Scranton, Pa., Dec. 9.

L. F. HIORNS.

How to Recognize Honey-dew

How can I recognize honey-dew when examining for winter stores?

St. Paul, Minn., Dec. 9.

J. PETERS.

[It is rather difficult for a beginner to recognize honey-dew, especially when there is but little of it in proportion to the amount of honey in the comb. In fact, it is often difficult for one who has had experience to be able to say definitely whether there is honey-dew in the combs. A chemical analysis reveals honey-dew, of course, but this is out of the question ordinarily.]

By holding the comb up to the light, one can often detect honey-dew by the muddy dark color. Pure honey which is dark in color, unless it is beginning to granulate, is generally clear, though dark; while honey-dew, if there is very much of it at least, has a dirty smoky color.

The taste is different from that of any kind of honey, as it is rank and disagreeable; and if the contents of the comb are nearly all honey-dew, the flavor is often quite bitter.—ED.]

Cause of Fermentation of Jamaican Honey Late in Season

In Jamaica, honey ferments in the comb as well as in the extracted form; but this happens only to honey gathered after the month of May. In June and July, fruit commences to ripen in great quantities, especially the mangoes, and it is the juices of the fruit which the bees gather, and with which they adulterate the honey, that cause the fermentation.

BEES GATHER POLLEN WHETHER THEY HAVE A QUEEN OR NOT.

The fact that the bees are carrying in pollen is no proof that the colony has a queen. The above reminds me of a youth of about sixteen summers who visited my apiary, and who professed to know a lot about bees. On seeing a bee enter its hive with a load of pollen, he exclaimed, "Oh! I am sure that colony has a queen." "Why are you so sure?" I asked him. Then he began to explain that, if there was no queen in the hive, there would be no young larvae to feed; hence the bees would not gather pollen. Becoming somewhat interested in the lad I asked him to see whether the colony really had a queen. I now discovered that all the youth knew about bees was the difference between a cross colony and a gentle one. He must have read about pollen in some ancient bee-book.

F. A. HOOPER.

Four Paths, Clarendon, Jamaica, B. W. I.

Meeting of New Jersey Beekeepers

We were obliged to change the date of the meeting to Dec. 20, but we had a large and successful meeting, fifty being present. There was a fair show of honey, considering it was the first attempt at

a venture of this kind for this Association. There were four entries of extracted honey, three of comb, and two of old beebooks. Harold Hornor, of Philadelphia, did the judging.

For the best display of old books, the award was given to Mr. J. H. M. Cook, of Essex Fells, N. J., who had one of Quinby's first edition as well as an old one by Miner, and a *Beekeepers' Journal*.

For the best honey in $4\frac{1}{4} \times 4\frac{1}{4}$ plain sections, W. B. McNamee secured the reward; and for the best in 4×5 plain sections, E. G. Carr was the winner. There were no beeway sections shown.

New Egypt, N. J., Dec. 21. E. G. CARR, Sec.

Trading a Skunk for a Colony of Bees

In December, 1901, I got my first stand of bees. We were cutting wood, and caught a civet cat (small skunk). On the way home we passed the house of a trapper, and he wanted the civet and tried to buy it. As he had no money I asked him how he would trade a colony of bees for it. He asked me a dollar to boot, so I gave it. I tied them on the back of the buggy and took them home.

The rest of the folks all laughed at me; but I had always wanted bees, and was going to see what I could do with them. I had an old A B C of Bee Culture that my grandfather gave me. I bought two Danzenbaker hives. I let the bees swarm once, and then transferred them. I used no veil nor smoker, and didn't get stung; but I soon learned better in trying to hive a wild swarm. It was on the corner of a neighbor's house, and was trying to go into a knot-hole where there were some bees. I got my hive fixed on the ladder, and took a weed to brush them off. I got about 25 stings, but I secured the bees.

I have tried about all of the different sizes of hives; and the best for a beginner in this State is the ten-frame dovetailed. No beginner should use any smaller, and I think all manufacturers should have a notice to that effect in their catalog. I have the Danzenbaker; and while it is excellent for the purpose of getting the honey in the super, I always have to feed or put on a super of shallow frames for winter. I always get my biggest colonies and the most honey from the ten-frame hives.

I think one of the most serious mistakes that most beginners make is in not having a good strain of bees. I always get from 30 to 50 lbs. more honey from my pure Italian bees than from the common bees. The best queen that I ever had lived three years, and her colony always ran 100 lbs. ahead of the rest. They swarmed once in that time. I have always found it easy to keep down swarming.

There are but few people who will make good in the bee business, as most of them do not understand bees, and will wonder why they don't do better.

I gained some valuable information in helping to move an apiary of 40 or 50 colonies, all kinds of hives, and in all conditions. Most of them had not been opened for years. Part of them had combs and honey on the outside. Some were rotted out. It took four of us the greater part of a day and all night to get them nailed up.

Blaine, Kan., Dec. 11. W. V. PITTINGER.

Mating of Queens

One thing does not seem clear to me in regard to queen-mating and queens clipped to prevent swarming. You say they mate only on the wing. Well, what is a queen worth with one wing off? They come out and flutter around on the ground alone.

In the Jan. 1st issue for 1912 some one wanted to enlighten beginners by asking questions and answering them himself. In his description he makes

out that the worker bee is only a stunted female. I didn't suppose the Creator made any stunts.

Greenleaf, Idaho, Dec. 19. B. H. VANTRESS.

[Queens very rarely meet a drone more than once, and this mating takes place within a week or ten days after the queen has hatched from the cell. If a beekeeper should clip a virgin queen, that queen would, of course, become a drone-layer. The idea is to clip the queen *after* she begins laying worker eggs, and then she will continue to lay fertile eggs, even though she never meets a drone again, for from two to three, four, and sometimes five years more. There are records of clipped queens that have been profitable for six years.]

It is true that the worker bees are undeveloped females, really stunted in their growth by coarser food given in the larval stage and the smaller cells. This is proven by the fact that the workers have every female organ, although in rudimentary form. —ED.]

Hive-tool Made of Old Sheep-shears

Mr. Crane's trouble with hive-tools, page 763, Dec. 1, makes me think it would be a good thing for the inspector to carry a good hive-tool. I used to use a screw-driver, and thought it was all right; but I should like to give a description of an article that will make a better hive-tool than a screw-driver, and it may be found on almost every farm.

Take an old sheepshears. Cut it into two equal parts; bend the flat part of the handle so it will form a ring. Wrap the handle with sheep-twine; break off the point so it will be about $\frac{3}{8}$ inch wide. One side of the blade is oval. It should be ground flat so it will not spoil the hive. Then you have a fine tool.

Sycamore, Ohio, Jan. 1.

C. A. HALE.

Bee-stings Had no Effect

The enclosed letter from Geo. Shiber will interest the readers of GLEANINGS. I have not changed my mind on this subject. There is but one rheumatism, the inflammatory type, and this is a germ disease. Bee-sting poison has no effect on it.

Buck Grove, Ia. A. F. BONNEY.

[The following is the letter referred to.—ED.]

My boy, fifteen years old, is just recovering from a bad attack of inflammatory rheumatism. His joints were swollen badly. The truth is, he has been stung to "beat the band" all summer, and he helped all the time while we were extracting 8000 lbs. of honey. The stings did not stop the rheumatism.

Randolph, N. Y.

GEO. SHIBER.

Another Report Favoring Silverhull Buckwheat

The hot dry spell caused a short clover-honey flow last summer; and since the Japanese buckwheat has been grown here the honey from buckwheat has been very light in color. If we go to a field of silverhull buckwheat in full bloom in the morning, it will be alive with bees; but in a field of the Japanese there will be but a few bees at work. The Japanese yields more grain by far, and that is the reason that it is grown so largely.

Bartonsville, Pa., Dec. 22. ELWOOD BOND.

Limiting Time for Inspection to a Short Period

It has been proposed in Vermont that the time for foul-brood inspection be limited to a very short season, and the bill will be introduced at this session. As no other State has done this it might be well to have the opinion of some practical beekeepers. The member from this section desires advice from GLEANINGS readers.

Swanton, Vt., Dec. 17.

MRS. C. A. SIBLEY.

Our Homes

A. I. ROOT

What hath God wrought?—NUMBERS 23:23.

Lord, thou hast heard the desire of the humble; thou wilt prepare their heart; thou wilt cause thine ear to hear.—PS. 10:17.

[To the following fragmentary account of a trying experience with a new "talking" machine, an explanation is necessary. The dictaphone is a machine somewhat on the order of a common phonograph, which enables one to dictate letters on a wax cylinder which, later on, in another machine, gives a faithful reproduction of the record to an operator who writes it on a typewriter. In order to save A. I. Root's time and strength while he is in Florida, one of these mechanical stenographers was sent to him, the idea being that he could send the cylinders back to Medina to be typewritten. He did not realize how fragile the waxen records were, however, and so he did not pack as carefully as he should have done the first six that he sent. The result is that four of them were broken to "smithereens" in transit. Numbers two and three were intact, and "Our Homes" for this issue is the part of the story they tell.]

Since the first cylinder was broken, as well as numbers four, five, and six, we have no idea what text he selected; but in view of the fact that, in a note accompanying the cylinders, he was very enthusiastic over what he regarded as one of the new wonders of the age, we have an idea that he would like the ones which head this page. However, if he could have known that two-thirds of his work was to be lost outright because of broken cylinders we fancy that he might have added to it the third verse of the sixth Psalm.

There was some adjusting needed; and, as will be seen, the account starts right in the midst of the trouble he was having.—H. H. ROOT.]

As a great part of my life was spent in the watch-making and jewelry business I have been in the habit of handling delicate pieces of machinery and small tools. Very few necessities for this work, however, were to be found in our Florida home; and another thing, not only has my hearing failed more or less, but my eyesight also. Then the fingers of my right hand that has served me so skillfully for years past were also getting more clumsy and unwieldy than they were forty years ago. Notwithstanding, in a little time I succeeded in getting the machine apart and in managing the electrical attachment so that I got along fairly well. Very soon the carriage, which travels over the cylinder refused to move. In order to remedy this I had to pull the machine apart still further, and I puzzled several days over the problem of finding a screw or something else that would let it come apart. Finally I told Mrs. Root that I could neither eat nor sleep until I found out what the trouble was with the dictaphone; and in order to get at this trouble it must be pulled to pieces.

I was still puzzling over it until bedtime when Mrs. Root came into the room and suggested it was time to kneel down, and

asked if I wanted to stop just then. As I was getting to be more or less vexed and impatient because I wasn't making any progress, my first impulse was to say that I hadn't time just then. On further reflection, however, it occurred to me that it was just the time of all times that I needed to kneel down and ask the dear Savior not only to give me patience but skill and understanding in the work that puzzled me so much. So we knelt together, and I prayed over just this one thing and nothing else. (By the way, friends, let me stop right here to remark that, though it is right and proper to pray for our nation or country or neighbors or relatives and many other things, when in trouble I have found relief by making just one petition, and nothing else, and ending it up with my little prayer, "Lord, help.") As we arose from our knees the dear wife, as a matter of course, asked if she could help in any way. I told her that there was a pair of eye-glasses for very close vision that I had used in testing eggs, but they had been lost some time. If I had those glasses I thought I might be able to see in the machine by the aid of the electric light, and find how it might be taken apart. In a little while she produced the needed eye-glasses from an old desk, and almost the first thing when I arose from my knees I discovered, with the aid of these glasses and the strong electric light, a little bit of screw, smaller than a pin-head, away down in the depths of the machinery. I said to myself, "Surely it can not be possible that this little screw releases the machinery so it will come apart." Now, I had no small screwdriver, such as watchmakers use, with which to remove the screw, nor had I any tweezers to pick it up when released—or at least I thought at first that I had none. I wondered if this little screw would happen to be loose enough so that I could turn it out with the point of my knife. It was loose, and in a little time I had it out so that I could get it if I had the proper tool. Then I thought of a pair of tweezers that we used for some time a year ago or more for pulling out stick-fleas. (I am glad to tell you that not a stick-tight flea has shown itself this winter so far, either on ourselves or in any of the poultry-yards. They have been vanquished completely by our heroic treatment, which seems the proper means to rid ourselves of this insect pest.) With the aid of these tweezers I soon had the little screw safely deposited

on the table of my secretary. And, sure enough, this permitted a part of the whole shaft to come off. Then was revealed a larger screw that could be turned out, letting the whole thing come to pieces. My prayer was answered. I very soon found the trouble with the machine, and the reason why it would not move the cylinder. There was a little screw that was not turned up tight enough.

Let me pause a little right here. In this day and age of wonderful progress, every one who is at all desirous of being up with the times must have more or less to do with this new and complicated machinery; and whether it be the automobile, the mowing-machine, reaper, or even the up-to-date dictaphone, it behooves us all to know if possible in regard to these wonderful labor-saving implements; and it behooves us also to be able to undertake to remedy minor difficulties. Now, after many years of experience let me give you a few suggestions before you try to take any complicated machine to pieces, whether it be an automobile, mower, or reaper. Be sure that you have all the available tools gathered together that you will need. Then get a clean piece of paper or newspaper, if nothing else is handy, and lay your tools on this paper; and when you commence taking the machine apart, lay the different parts, as you take them off, down on the paper where they can not be lost, misplaced, nor dropped in the weeds. When you are at work with agricultural implements out in the field this is especially advisable. Some farmers have a fashion of having the handles of their tools painted red so that, if they are laid on the ground or in the grass, they are more readily discernible because the bright red quickly catches the eye, and I have found this to be an excellent suggestion. But, no matter how much you are hurried, do not under any circumstances get into the fashion of dropping nuts or bolts down in the grass, weeds, dirt, or rubbish that may be around where you happen to be making repairs. I have seen quite expensive delays caused by this piece of carelessness.

Not long ago a skillful mechanic was called upon to repair a reaper, and he was obliged to go out by the roadside in the grass and dirt. He did his work in a workmanlike manner, and the owner of the machine started off with it; but after he had been gone some time we found in the grass and weeds several important washers which had been laid down and carelessly forgotten. It often happens that a good mechanic may do more harm than he does good; but it is seldom that you find a man or a firm

who is willing to pay for such loss by stupid, careless, or heedless workmen.

Let us now go back to the dictaphone. A washer slipped out of my clumsy and tired fingers, and it went jingling down on the floor under my secretary. It was already after my bedtime, and I was nervous and fidgety. But while I was hunting on hands and knees, Mrs. Root called and wanted to know what progress I was making. I had to tell her of the loss of the washer. She got up immediately and came and helped me. We looked all around the secretary, moved the rugs, shook them out, and went as far from the table as we thought the little washer could possibly have rolled, but without success. I was tired and worried, and almost ready to feel vexed and impatient, and finally that little short prayer of mine rang out, "Lord, help." In an instant Mrs. Root came up before me with her face shining, and held up the little washer that had made so much trouble. It was put back in place, and the machine was apparently all right. Now all that we needed to wait for was the mouth-piece and rubber tube. The next day, it was not until evening that I got time to test the machine once more. Almost with trembling hands I put every thing in the proper position and waited anxiously to hear it talk back. But again I was doomed to disappointment. There was no word, no sound. I talked louder, but with no avail. Mrs. Root was over at the neighbors, and I knelt down again and asked the dear Savior to instruct me once more and help me out of my trouble. Then I got up and tried it once more, and shouted "Hello!" until I feared I might disturb the neighbors. In response to this my heart was rejoiced by a faint "Hello." Then Satan or somebody else tempted me to think that I was too deaf to use a dictaphone any way. What did it mean? If the dear Savior had helped me the night before, was it possible that he should disappoint me in this way when I had gotten so far along? Then I remembered the blind man who was healed, and replied to his friends that he saw men walking about as trees. He applied to the Savior again and again. The Master touched his still imperfect eyelids, and then he went his way rejoicing, because he could see plainly his friends and neighbors and beautiful trees. I knelt down once more and said, "Lord, I believe. Help thou my unbelief." I then remembered that other text about the friends—how the Savior gently remonstrated with his followers because they could not understand or comprehend after the repeated miracles they had wit-

nessed. They were still lacking in faith. Was my faith lacking? With renewed hope I started to investigate the machine once more. I got Huber's letter of instructions, and finally came to the conclusion that every thing was all right except that I did not have the speaking-tube, which had not yet come.

Whosoever therefore shall be ashamed of me and of my words in this adulterous and sinful generation, of him also shall the Son of man be ashamed when he cometh in the glory of his Father with the holy angels.—MARK 8:38.

Let yo'r light so shine before men that they may see your good works, and glorify your Father which is in heaven.—MATT. 5:16.

He that goeth forth and weepeth, bearing precious seed, shall doubtless come again with rejoicing, bringing his sheaves with him.—PSALM 126:6.

SOMETHING GOOD FROM A LOCOMOTIVE FIREMAN.

I am much pleased with your paper, and only wish that I could afford it for a year; but will take advantage of your six-months' offer, and may be by that time I can renew for a year. I do like the way you write under the heading of Our Homes. If Christian men and women would use their influence more in their every-day life, humanity would be greatly helped. Many Christians are like the young man who joined the church and then got a job out west in a lumber-camp. Before leaving home some of the elders in his church told him that he would be thrown among bad and rough men while away, but that, if he would trust in God, he would have no trouble. He went away, and in about a year he came home. His pastor asked him how he got on out west. He said he did not have any trouble at all, as they didn't even find out that he was a Christian.

I wonder if our daily associates know that we are Christians? Let us not be ashamed of Christ under any circumstances. Let us not forget the great liquor curse, the white-slave traffic, etc.

I am a locomotive fireman, and live in the city. I have eleven lots, 40x120. On one we have our small five-room home. In the back yard we have peach, apple, pear, and plum trees, all bearing. My wife looks after the flowers and three colonies of bees and also the chickens. The bees are a cross between the black and Italian. This year we got over 300 lbs. of fine honey. I do not know much about bees, but am learning something more each year about them.

St. Joseph, Mo., Oct. 25.

X. T. CRAGUN.

May the Lord be praised, dear friend, that we have at least one locomotive fireman who is not only a Christian but one who is not afraid or ashamed to show his colors; I suppose, therefore, that your boss engineer never uses a bad word toward you, and certainly you never use any bad words in his presence (nor out of it either). I once rode for an hour or two in a caboose where scripture texts were tacked up on the walls. I found the freight conductor was a professing Christian, and asked him about swearing on his train. He said, "Mr. Root, I never swear at my men, and they never swear at anybody nor at any

thing—at least not in my presence or hearing." That was years ago; and I hope and have reason to believe that railroad men, especially the men to whom I refer, while at work loading and unloading freight, are of a higher type than they were a few years ago. These rough helpers in railroad traffic have not only severe hard work, especially when the train is behind time, but they have many provocations, and they certainly need the grace of God in their hearts if anybody does. The Y. M. C. A. has been making a special effort, as you may know, to look after these men. They are giving them clean beds, good and nourishing food, and at a less price than they formerly paid at saloon hotels. May God be praised for what the Y. M. C. A. has done. While we are sending vast sums of money to support and keep at work foreign missionaries, I have wondered sometimes whether we were doing missionary work that *needs* to be done in our own land, and oftentimes in our own homes. When I scrape acquaintance with these men covered with coal dust, and soot all over their overalls and jackets they often seem surprised to be recognized as men and brothers even despite their uncouth environment. When we recognize how many of these men are killed year after year, often through no fault of their own, especially while they are straining every nerve to take care of the traveling public and of the farmers' produce, shall we not improve every opportunity to give them a kind word of encouragement?

This brother has a little home with a back yard where he has a garden, fruit-trees, and some bees. The good wife has a busy time in looking after and caring for things around their home during her husband's absence for so many hours each day. I believe the Interstate Commerce Commission has interposed, requiring that these men work only so many hours a day. Often during an emergency they work over-hours and even during the night time.

In our haste to get around quickly and get our produce to market, getting our needed tools and supplies promptly, etc., let us not forget this army of workers who make it *possible* for us to live and have all the comforts of life during this twentieth century.

Once more, before closing, may we have grace and courage, each and all, who profess to be followers of the Lord Jesus Christ, to let our light shine in a reasonable and sensible way, no matter where we are. Of course no one expects you to go out of your way so much as to boast

that you are a member of the church. The scriptures enjoin us to be diligent in season; and not only that, but even out of season. May God bless the good brother who has by his letter braced us up where many of us need a bracing. I for one need it myself. And his message comes to me just before I am starting to my southern home. A great many times in traveling I feel too tired or worn out to open up conversation, say with the tired neighbors around me on every side; but some of the pleasant acquaintances I have ever been fortunate enough to make have been opened up while taking a long trip somewhere. In after years I frequently meet these people, and it is one of my happy experiences to recount the incidents of travel of years ago. Away off in California I dropped a letter in the box, having my printed address on the envelope. The postmaster happened to be near and said, smilingly,

"Mr. Root, how does it come that you are sending letters to *yourself*?" Then he told of having passed a part of the night with me on a trip through the mountains years before.

Now, if you will take a little pains to get acquainted with your fellow-travelers there will almost always be a chance to put in a word for the dear Master, and you can do it, too, without being thought cranky or a little off in the upper story. Several times I have been enabled to get a promise from an acquaintance of only a few hours, that, when he got home, he would hunt up the pastor of the nearest church, and at least encourage him by being on hand at church or Sunday-school or both; and what a thrill it gives me when, years after, and I had forgotten all about it, to find from some pastor that my talk was the means of enabling *him* to gather in the "precious sheaves."

Poultry Department

MUSTARD FOR POULTRY.

We clip below from the *Illustrated Poultry Record* (English):

About two years ago six pullets were placed in competition with two other pens of birds numbering six each, and sisters to them. The first pen were fed on ordinary foods, the second on similar foods with an addition of capsicum, and the third pen also on similar foods, but with an addition of one teaspoonful of Colman's mustard. The mustard-fed birds laid during the period of six months commencing in October and ending in March the grand total of 532 eggs against 359 and 399 produced by the plainly dieted and capsicum-fed birds respectively. In this way did Mr. Ralph R. Allen, poultry lecturer to the Herts County Council, prove to the public that mustard-fed birds produce a larger supply of eggs.

Later he proved that the feeding with mustard in no way debilitates the birds. He produced a short brochure entitled "Mustard for Poultry," followed twelve months later by a booklet giving 101 reasons why mustard should be employed during the winter months to increase production. Mr. Allen has now issued a third brochure entitled "Enquire within upon Poultry and Egg Production," containing many valuable hints on practical poultry-keeping. The book is well thought out and well compiled.

From the above it would appear the six pullets were given a teaspoonful of mustard *daily*, for six months, which is a much larger "dose" than we have ever fed. So far I have never seen any unfavorable report from the use of mustard.

WHERE TO GET MUSTARD BRAN.

I notice in GLEANINGS for Nov. 15, in the Poultry Department, a suggestion for feeding mustard to poultry. The question is also asked whether some one can not advertise and furnish "poultry mustard" at a considerably smaller price than the ground mustard of commerce. I notice in the *Poultry Fancier* for December, a journal edited by

F. W. Delancy, Sellersville, Pa., an advertisement from Juniata Poultry Plant, Lewiston, Pa., in which a mustard bran is offered for sale. I believe mustard is better for poultry than cayenne or red pepper and many patent poultry powders.

Derry, Pa.

LAWRENCE L. PECK.

KEEPING POULTRY AT ONE-FOURTH CENT PER HEAD PER DAY.

Mr. Arthur Head wishes some details of feed and prices in this case. He would like "to know how it is done." It would be simple enough to give the bookkeeping details of this feeding, but I am now forty miles away from that yard, and have not been near it for two years, and did not carry away such details with me. The place was worked on shares; and as the owner was a pretty tight-fisted individual you may be sure he did not make the cost of feed any lower than it actually was. The accounts were checked monthly by two independent parties. It should be noted, however, that dry-mash or hopper feeding of any kind was tabooed. All fowls were hand-fed; all feed was carefully calculated and measured, and there was absolutely no waste of mash or grain. There was no waste by overfeeding the birds, and there was no waste by food going bad or by the birds scattering mash among the litter, or by supporting rats or other vermin. Any system that allows birds to gorge themselves at all times will soon run up the costs; and this is one reason why hand-feeding can walk all round dry-mash feeding. Animal food was economically bought. A local butcher supplied meat without bones at two cents a pound, and another butcher supplied bones for grinding at sixty cents per hundred pounds. This was rather different from buying meat meal (mostly ground bone) at \$3.00 per hundred pounds. As the meat was always fresh, pure, and sweet it was worth 50 per cent more in actual practice than the old horse meats mostly sold, and this in itself is an immense saving, apart from the actual prices paid. Little or no green food was purchased except oats used for sprouting to feed brooder chicks. The real economy lay in feeding the stock just as much as it needed, and absolutely wasting nothing

in any other way. Grain was bought from the ordinary supply houses at ordinary prices; but it was carefully examined for quality, and bought only from the firm that gave the best value for the money. Fowls were healthy and in good condition, and in the breeding season Leghorns and Minorcas gave eggs 85 to 90 per cent fertile. No grit was ever purchased, as we had a gravel-pit on the place which met all our needs for young and old stock. There were small economies in other directions which totaled to a tidy sum at the end of the year.

In this connection it might be useful to remember that in Britain two cents per week per head is the usual cost allowance for feeding a hen, and grain is generally dearer there than in America, especially corn (maize). But friend Head must be reminded that no method or system of feeding, however good, will of itself keep down cost. The man on the job is the only person who can do that in a poultry-yard. Victory depends not so much on the gun as on the man behind it. He is the key to the situation.

Philadelphia, Pa.

FREDERICK MARTIN.

SHALL WE KILL OFF ALL HAWKS INDISCRIMINATELY BECAUSE SOME OF THEM "KILL CHICKENS"?

Mr. Root:—Inasmuch as you published in your department a column letter devoted to the most unreasonable criticism of Dr. A. E. Fisher and myself, and then followed it with your own endorsement (page 751, 1909), I wish to present to you the evidence, just now published, on which my defense of the hawks is based. I never have defended all species of hawks indiscriminately, and I was surprised that, with your usual spirit of fairness, you should give your endorsement to such an article, especially when the writer's own language showed that his conviction was based on his prejudice rather than on an investigation of the subject. Dr. Fisher stands high as a scientist, and those who are making such vigorous attacks upon him are, without exception, men who have made no investigation of the subject, and thus expose their own ignorance. The average person does not know one hawk from another, and there is prejudice enough against them without a journal with such a wide influence as yours adding to it. I feel that, after giving the weeks of time necessary to carry out this investigation, the evidence gathered ought to carry some weight against a fellow who manifestly knows nothing of birds of prey further than that he has seen a hawk kill chickens.

Let me say that I have read your department with pleasure for years, and enjoyed it too. Whenever I come in contact with beekeepers I hear good words, not only for the magazine as a whole, but for your department especially. I am glad for its influence, and for the fact that you have endeavored to use your influence always for the right.

FRANK C. PELLETT, Inspector.

Office of State Bee Inspector, Atlantic, Ia., Nov. 12.

I hereby apologize to friend Pellett. Where a hawk has "acquired the habit" of killing chickens, no doubt it should be killed; but our best authorities are of late coming to the conclusion that we often find ourselves in a worse fix when we hastily carry the war of extermination too far. Witness the history of sweet clover, etc.

HOW HOT DOES IT GET IN FLORIDA?

I notice in GLEANINGS that D. W. Abbott says that on Oct. 15 it was 95 at 5 P. M., and 89 at 7:30. This may give your readers the impression that we are living very close to Hades. Now, Ten Broeck says in the journal that on that day the minimum

was 72 and maximum 88. Who is right? I should say Ten Broeck. I don't think the thermometer has been higher than 94 all this summer.

Bradentown, Fla., Nov. 11. J. W. BANNEHR.

Our readers will notice that there is a disagreement in the above of 6 degrees. Our neighbor Ten Broeck is a government weather reporter; has standard government instruments, and is probably very nearly correct; but as he is himself just now "under the weather" he may not have noted the warmest record of the day in question. Another thing: At one time we had our thermometer hanging in the woodshed; and as it didn't agree with his we gave him notice, and he directed us to place our instrument on the north wall of our house. This made quite a difference. Friend Abbott is out in woods, or clearing, rather, about two miles from here, and he may not have had a standard instrument.

Now, there is just one more thing to add. People who live here, especially if they have real estate to sell, are very backward, as a rule, in admitting any thing derogatory to their locality, such as "redbugs" and other insect pests, for example.

Many thanks to my good friend Bannehr for calling our attention to the matter.

"STOP SENDING YOUR PAPER."

The following letter explains itself:

Dear Sirs:—Please stop sending your paper. I do not want to be insulted every time I get a copy of it. I am drinking and smoking, and I like it, and do not feel like paying for any thing that is against my pleasure and the liberty of the land.

Big Wells, Texas, Sept. 28.

E. ZIEGAST.

With the great mass of kind words that come like snowflakes from January till December, once in a while we get something like the above. The good brother who writes it evidently comes from foreign shores. We judge so by his name and also because he seems to think the crusade for temperance is a restraint on "personal liberty." We are sorry to part company with him; but judging from past experience we think the time may come when he will feel like saying, if he does not say it right out, "Brother Root, I am convinced now that you were right and I was wrong."

A DOCTOR WHO HAS NO USE FOR ALCOHOL.

I began the practice of medicine in 1866; was taught that alcohol is a stimulant, and used it for several years, but always with disappointment, and quit its use entirely for other means from which I could see stimulating effects which I never saw from alcohol. "Wine is a mocker, and whosoever is deceived thereby is not wise."

Oxford, Col., Aug. 23.

S. W. MORRISON.